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## THE SIBERIAN RAILWAY.

In a recent article in the Fortnightly Review, the commercial and political importance of the Siberian Railway is discussed. The resources of Siberia, in their nature are not unlike those of Canada. It is very rich in gold, while there are whole hills of graphite (black lead) and lapis lazuli; coal can be picked up on the very road near Nerchinsk; there is silver in the same district, and there are rich mines of iron near Nikolaefsk. Siberia, like Canada, is rich in fish. On the Amur river 200,000 puds of kita fish have been caught within a few weeks in August, when the fish ascend the rivers; the pud (pood) being forty pounds, that means 8,000,000 pounds of fish. In the Khabarovka museum is a stuffed kaluga fish weighing 30 puds, or 1,200 pounds, caught in the Amur. The Russians have been struck by the fact that "the prosperity of Canada and its productive activity have grown, and continue to grow, with a rapidity which appears to us (Russians) miraculous, and by us inimitable just from the date of the completion of the Canadian Pacific Railway from the Pacific to the Atlantic Ocean." In 1889 they deputed to engineers to observe the Canadian line and its conditions and results. Attention in Russia was drawn to the fact that Canada, a country then of 4,000,000 people, had, by its own resources, without any pecuniary help from outside, connected the two oceans by an iron road 4,500 versts (3,000 miles) long, over very difficult and expensive ground for building, in the short time of four years; that the energetic population of Canada, 3,600,000 in 1871, and only increased to 4,300,000 in 1881, reached 5,000,000 a year or two after the first through train passed Winnipeg in 1886; that the quantity of grain carried in Canada had increased from 303,571 tons in 1886 to 500,000 in 1888; that in places without population there had arisen seven new towns, such as Vancouver, founded only in 1886 and holding 9,000 inhabitants in 1891. It was made known to Russia that "the cost of the Siberian Railway should not be even 65 per cent. of the cost of the Canadian Pacific."

## SUNDAY WORK AT LAKE PORTS.

The Duluth and Superior ministerial association has taken hold of a subject that will be of interest at all the principal lake ports. It is the matter of Sunday labor on boats and at docks and elevators.

Duluth being a lake and rail point, the discussion turned principally upon the traffic between vessels and the docks, mills and elevators which is ordinarily conducted on Sunday the same as any other day. Many men are employed in the handling of this traffic, and it was the impression that the work could be so regulated as to give employees and others concerned an opportunity to attend church if they so desired.

The association was not disposed to take a radical stand. The discussion was merely preliminary to the taking of steps to ascertain what could be done to correct apparent abuse of the Lord's day in this connection. It was agreed that the season of navigation was short and that delays meant money, but it was believed some arrangement could be made with all the interests that meet at the lake ports to give the employees at least a portion of the Sabbath day.

Some of the members of the association had been appealed to by employees connected with lake traffic to inquire into this matter and see what could be done, if anything.

A motion prevailed in the association to appoint a committee to confer with the ministerial associations of Buffalo, Cleveland, Chicago and other lake ports and agree upon some method of procedure. Dr. Cleland, Dr. Ryan,

of Duluth, and Rev. Messrs. Mason and Cady, of Superior, were thus appointed by the president of the association.

The committee will report at the next meeting of the association, which will be held in Superior early in March.

## WHAT THE SECRETARY SAYS.

Capt. Geo. P. McKay, treasurer and chairman of the committee on aids to navigation of the Lake Carriers' Association, says that some mistake must have been made in the report sent out from Washington regarding the recommendations of Secretary Carlisle for new aids to navigation, as some very important items have been left out. Nothing is said about lights for Poverty passage in Green Bay or for the Lansing shoals north of Squall Island in the Straits of Mackinaw, which are very dangerous spots. No mention is made of gas buoys. Capt. McKay is somewhat disappointed because these items are not included in the list. He will take the matter up with the officials at Washington at once and hopes to get the matter straightened up. The aids that are not included in the list are very important, as the points named are passed by nearly all the boats that trade to Lake Michigan. The officers of the Lake Carriers' Association have been at work trying to secure appropriations to mark the spots for some time and were hopeful that they would be cared for this winter, by the recommendation of the Light-House Board.

## ADMIRALTY LAW PRACTICE.

A prominent admiralty lawyer of Detroit, recently interviewed by a Journal reporter, said:

"There have been many changes in that practice of late years, so much so that it has almost ceased to be a steady thing in a year's business.

"The changes are many, and rather consist of a change of system, a broad and rather indefinite change, but one which, with the assistance of a proctor, out of his province, or made it possible for a safe and economical settlement to be made without him.

"In the first place, there are the changes in the form of insurance policies; in the second, the building of boats in every way better equipped; in the third, the deepening of the waterways and the improvements in lights, ranges, etc.; in the fourth, a far more general disposition to settle difficulties by arbitration rather than run the chances of long, expensive and tedious, as well as uncertain litigation. A glance will show the reasons are many and weighty.

"But, of course, the attorney suffers by this, though there is one feature about it that in a way recompenses him. When admiralty cases do occur, they are usually for greater amounts than formally, and the compensation for a long and hard-fought suit is naturally and necessarily higher."

There is one feature about admiralty practice which is almost lacking, and that is the retaining of an admiralty lawyer by the season or year. Vesselmen seem to prefer to take their chances, hoping they will not need him.

## COMPASS DEVIATION.

Our attention has been called to a letter in Fairplay, which is of general interest to our readers, inasmuch as it is frequently claimed that similar experiences are being met with on the north shore of Lake Superior, though not formally reported:

"Compasses and their deviations and errors being a matter of importance, you may, perhaps, be interested in a case of local attraction which came under my notice here. Whilst approaching here, Hafringe Lighthouse bearing

NNW (cm), about six miles distance, our standard compass suddenly started swinging over an arc of 16 points. On mentioning this to our pilot afterwards, he told of a 19 fath. patch on that bearing and distance which has been found to affect compasses so, and on the latest Swedish charts the bank and its effect are noted. Going out I shall try and pass over it again. Sea was smooth and compass steady at the time."

## FOG FORMATION.

Fog may form in at least three different ways: first, where the air is cooled by rapid radiation; second, where the cooling results from a mixture of different air currents; and third, where a cooling has been caused by an uplifting of the air. The first is the most common cause of fog formation. Radiation fog is generally formed over surfaces nearly level, when warm air comes in contact with cold ground. Sea fogs occur when there is a marked difference between the temperatures of the water and air, or when two water currents of different temperatures are contiguous. Coast fogs are formed when inflowing moist air from the sea passes over a chilled land, but more generally are formed at sea during the prevalence of some great area of high pressure, or "anti-cyclone," as it is technically known, and then are carried inland, dissolving as they go. It must be remembered that the atmosphere is something like a great gaseous sponge. Compression and expansion are constantly going on, with resulting cloudy and clear skies and different temperatures for various layers. Some of the inversions of temperature found with the anti-cyclonic conditions illustrate this excellently. At such times we find that at the foot of a large hill or mountain it is colder than at the top. The air is often twenty or thirty degrees warmer on the summits than in the valleys. Our great fog-banks and the fogs which remain for days are due to such temperature inversions. On the Pacific coast it is easy to trace the relation between the movement of the "high" area and the fog. Professor Davis tells of somewhat similar conditions in December, 1879, when the lowlands of Europe were shrouded in fog for most of the month, while in the mountains it was clear and mild, and over twenty degrees warmer than below. The low countries were lost beneath the sea of fog, and the hills piercing through were like islands in their isolation. Fog and frost both occur when the skies are clear and little or no air is stirring. A strong wind so thoroughly mixes the air that there is little chance for cold dry air to settle in the hollows and low places. Fog, then, as the natural preventive of frost, may be a blessing to the orchardist; but there are others, particularly travelers, to whom the fog can be but a source of annoyance and danger. For example, on December 17 and 18, 1895, an area of high pressure lay off the Middle Atlantic coast. At New York such a dense fog prevailed over the rivers and bay that the Sound steamers did not attempt to pass through Hell Gate, and the ocean steamships were all detained below Quarantine. Of course there were numerous accidents.—From "Fog Possibilities," by Alexander McAdie, in Harper's Magazine for January.

## PERSONAL DAMAGE CLAIM.

On Lake Huron, during the night of May 7, 1895, there was a collision between the S. I. Kimball and the George Stone, owned by M. A. Bradley, Cleveland. On Saturday last, William Brown brought suit against Mr. Bradley in the Common Pleas Court at Buffalo to recover damages to the amount of \$240.00. He says that he had property valued to that amount on the Kimball and it was lost as a result of the collision. The plaintiff claims that the Stone was at fault for the casualty.

**LAKE LEVELS.**

On so important a subject as lake levels it is of interest to note any theory which may be advanced by those who are in a position to advance opinions in the matter.

Mr. J. C. Burton, the well-known marine insurance agent of Detroit, expressed himself recently as follows:

"I've got a boy 11 years old, and he'll never see the day a 20-foot channel becomes a fact. Now, look here. Suppose we take a small lake, for example, having a small stream two feet deep draining it; and suppose I deepen that stream to four feet, what will be the result? It will lower the surface of that lake, won't it? Well! Now take Lake Erie and the other lakes; what is the result with them? Though they are very large, and their surfaces decline almost imperceptibly, still they are affected, there is no doubt of that.

"Now, about all this talk of raising the water in Lake Erie and so on through the other lakes. Did you ever stop to think what that means? How much does Lake Erie fall from? The mouth of the Detroit river to the Niagara river, near the falls. Something like 13 or 14 feet, isn't it? Well, we'll say 12 feet, for sake of argument, and set ourselves to build a dam at that point to stop the flow of water and raise the level. Now, there's the point—the level. We'll place that dam 13 feet above normal water mark in the Niagara river and we'll follow back up the lake to see how the level is affected.

"At Port Colborne now the water is much improved, and a boat drawing 20 feet or more could easily get around. At Long Point there is a great increase also, though not so great as at Port Colborne. Then we stop at the Eau, and there the water is better also, though it has not raised as much as farther down; so on until we come to the mouth of the Detroit river, which was 12 feet above the normal water level of the Niagara river, and there we find—just the same level as before, for the water pouring down from Lake Huron still pours over the 12-foot dam in the Niagara river. It has to, because it simply rises enough to flow over it, and thus Lake Erie only is deepened. There is no current in Lake Erie, because the level is equal. There is no fall, and the lake simply covers all those portions of railways, cities, wharves and lands within reach of its increased surface, but when it reaches that point the surplus falls over the dam as its easiest outlet, and the rivers are not deepened, and will not be, until the dam is made higher than the difference between Niagara's level and the level of the current of the Detroit river."

"I believe I have always been a constant advocate of deeper water for the great lakes system," says Captain McDougall, "but I am now of the opinion the present plans for securing it will be a failure. This depth of water has been the dream of the maritime community of the great lakes for a long time, and it is idle to shut our eyes to the fact that instead of realization another year it will be many years and possibly never. It is not a popular stand to take but there is no use in hiding the fact and we might as well quit talking about 20-foot of water all the way to Buffalo first as last. Noble work has been done, but the end seems to be just as far off as ever.

"With all the work that has been done in St. Mary's river the depth is but little better, if any, than we have had in the past. Of course, there have been fluctuations in the depth, due to natural causes. There is a depth of about 17 feet at higher water over the rocky bottom which has been deepened by blasting at the Encampment and the dyke, and I understand the original depth aimed at to obtain 20 feet of water has been attained. The depth of the blasting has been reached, but there is three feet of water not obtained, owing to a lowering of the water at that point since the recommendations by the engineers. Since the improvement at the Encampment began ten years ago, the water has fallen 27 inches, I am reliably informed, and this in the face of the fact that the water at the lower end of Lake Superior is now 12 inches above the normal level. In consequence of the higher level of Lake Superior there must be a correspondingly greater volume of water passing over St. Mary's Falls and through the river into Lake Huron, yet we are confronted with the fact that the draft in the river is not increased at the points where improvements have been made. This may appear rather strange, but it is a fact capable of demonstration and is not encouraging for our 20-foot channel project. How do I account for it? Let us go back a bit.

"When it was proposed to cut the Limekiln crossing at the head of Lake Erie, I was called on for an opinion as to the probable results, and I expressed the opinion that

to cut through the river would lower the water in Lake St. Clair and eventually in Lake Huron. That was in 1874 and I advocated at that time the damming of the Niagara river to raise the lake levels instead of cutting down the shallow places. The barrier at the Limekiln crossing was cut out, and while the level of the lake and river St. Clair was effected to some extent, it remained for the cutting of another channel to affect Lake Huron in a marked degree. At the foot of Lake Huron, and directly opposite the north of the St. Clair river was a vast area of shallow water, which was due to the deposits of refuse by storms and ice for ages. Vessels had to shape around this place, but now they are provided with a channel 600 feet in width direct from the lake to the mouth of the river, which has greatly facilitated the flow of water from the lake and probably produced erosion in the narrow neck where the current is swift. This channel, through the shoal described, was originally 10 to 15 feet deep, and it is now 20 feet in many places.

"It is my impression that right here is where the first cause of the lowering of the water in the Soo river lies. The waters affected are Lakes Huron, Michigan and Georgian bay and the Soo river practically to the dyke where the current begins. This is a water area of not less than 130,000 square miles and it has taken a long time for the dredging of the channel at the foot of Lake Huron, together with the gradual erosion at that point to tell on such a vast area. Storms beating down toward the foot of Lake Huron, through the channel and into the mouth of the river, have also assisted the conditions I have described to hasten the movement of the water from the lake into the river.

"The amount of the whole thing is that the waters of Lake Huron and St. Mary's river have been lowered to such an extent that all the work to get a 20-foot channel in the St. Mary's river has simply resulted in maintaining a depth that we had previously enjoyed. The dredging and blasting is down to where, according to the estimates made several years ago, we should now have 19 or 20 feet draft, yet it transpires we have just been holding our own and really have made little substantial progress. The dredging in the St. Mary's river has facilitated the flow of water there and the fact that it ran off more rapidly has had something also to do with the low stage. If there was not an increased volume of water going over the falls as now at the foot of Lake Superior, the draft in the river would be even more marked.

"The conditions are favorable at present for deep water in St. Mary's river, and the work on the 20-foot project there is nearly completed, yet the situation there is as I have described. The rainfall during the past year or two in the Lake Superior region has been very heavy, which accounts for the high water that now prevails. With very high water in Lake Superior, and with the draft of water in St. Mary's river down to about 17 feet, where improvements have been made and the 20-foot project well nigh completed, what are we to expect of the draft in the river when the stage of water on Lake Superior drops to normal or a little below? We may not feel serious effect next season, for the high water on Lake Superior, supplemented by even less than normal rainfall may be sufficient to prevent lower water at present for that period.

"A further menace to shallow waters is the Chicago drainage canal. There is a ditch which, it is said, will draw off a volume of water from Lake Michigan equal to 300,000 gallons a minute, or equal to at least one-fourth of the volume of the St. Clair river. Everything is against the 20-foot project, and I look to see a lesser draft before I see it deeper than it is now. It is only the exceptional conditions of high water on Lake Superior that, as I have said, give us at present a maximum draft of 17 feet in the St. Mary's river. I have no suggestions or criticisms to make. I simply state facts that have lately come to me from reliable sources.

"The proposition to dam the waters flowing out of the lakes at different points has been suggested, and may be practicable if this country and Canada can get together on the question. Assuming they should get together and agreed to damming the waters, then would arise the question of damages for lands that might be overflowed. There seems to be some question whether damages of that character can be collected, but there has been one case where they were and that was in Canada. The Canadian government had to settle for flooding some land with one of the canals in the St. Lawrence river district."

**MILWAUKEE'S WINTER FLEET.**

Not for a number of years have the docks of Milwaukee which afford safe winter moorings been so barren of vessels as at the close of the present season. A trip along the Milwaukee, Menominee and Kinnickinnic rivers shows three points only where vessels are grouped—the Illinois Steel Co.'s dock, the deserted Bradley lumber and planing mill dock, and the South Holton canal or "Norwegian alley," as it is familiarly known by the sailing fraternity. In all only ninety-two vessels are at present wintering here, of which thirty-nine are steamers, thirteen barges and forty schooners.

Steamers—Maryland, Manchester, Manhattan, Massachusetts, Merrimac, Minnesota, Mary A. McGregor, Marion, Walter Vail, Lora, Inter-Ocean, W. B. Morley, Helena, Veronica, F. Schlesinger, W. H. Wolf, F. L. Vance, Escanaba, Lansing, George H. Dyer, Fred. Pabst, R. P. Fitzgerald, W. M. Egan, John N. Glidden, Neosho, Conemaugh, Italia, E. A. Shores, George C. Markham, Joys, Westover, Hilton, Colin Campbell, George Burnham, Bloomer Girl, C. Hickox, John Schroeder, Mary Mills, revenue cutter Andrew Johnson.

Barges—Amboy, Wadena, Battle, Aberdeen, A. T. Bliss, Metacomet, Noquebay, Richard Winslow, Sidney O. Neff, Noah's Ark, Grace Grummond, Bahama, J. S. Ryan.

Schooners—Walhalla, Minnehaha, Black Hawk, Alice M. Beers, Charles Marshall, Annie Dall, M. Capron, Nellie and Annie, Elida, Dan Maber, Narragansett, B. F. Wade, Pride, Maggie Thompson, L. W. Perry, Conquest, Annie O. Hanson, A. B. C., F. M. Boaz, C. Harrison, Eliza Day, Emma Banner, M. A. Gregory, Oneida, C. E. Wyman, Ebenezer, Ida, S. Thal, E. Scoville, Challenge, Willie Loutit, Elva, La Petite, Emily and Eliza, Charles Luling, Kewaunee, Star, John C. Bauer, M. N. Dunham, Fearless.

**LAID UP AT MANITOWOC.**

Manitowoc's winter fleet is as follows: Steamers—Virginia, Chicago, Sheboygan, City of Green Bay, Liberty, Francis Hinton, T. S. Christie, Normandie, Simon J. Murphy, George D. Nau (tug). Schooners—Nellie Church, F. Miner, Glen Cuyler, Lizzie Metzner, James H. Hall, Charley J. Smith, Isolda Bock, Emma L. Nielson, Linerla, Lydia, Burt Barnes, Oscar Newhouse, Naiad, Active, L. B. Coates, Little Georgy, Jessie Martin, Merchant, Libbie Carter, Agnes, Actor, Felicitous.

**WRECK REMOVAL.**

Tenders addressed to the undersigned at Ottawa and endorsed "Tender for removal of wreck of steamer 'Grand Traverse,'" will be received up to the 20th of January next, for the removal of the wreck of the steamer 'Grand Traverse,' now lying sunk in the channel north of Colchester reef lighthouse, in Lake Erie.

Persons tendering to explain the method by which they intend to remove the obstruction, and when they will undertake to complete the work, and contract to be made subject to satisfactory and complete removal by approved means, by the time named, and subject to disposal of material removed in a manner approved by the department.

Contractor to forfeit claim for any compensation unless the work of removal is satisfactorily completed. Each tender to be accompanied by an accepted cheque of a Canadian bank equal to 5 per cent. of the whole amount of the tender, which will be forfeited if the party declines to enter into a contract to remove the obstruction. If the tender be not accepted the cheque will be returned.

F. GOURDEAU,  
Deputy Minister of Marine and Fisheries.  
Department of Marine and Fisheries, Ottawa, Canada,  
18th December, 1896.

**THE DETROIT DRY DOCK CO.**

The Detroit Drydock Co. has decided to build a sister ship to the steel steamer Senator at its Wyandotte yard for the market, or on speculation and to builders' account. With this end in view, Supt. Kirby and the officers of the Amalgamated Union of Iron Ship Builders and Boilermakers have had several conferences, and it is now reported that they have agreed that all riveters and other members of the union working on the new steamer whose pay is more than \$1.50 a day shall receive but \$1.50 a day until the steamer is built and sold, when the balance due them will be paid. After the steamer has been finished six months and she still remains unsold, the men will be paid the balance due them with 4 per cent. interest. All men receiving \$1.50 a day or less will be paid in full. Work will be begun on this basis as soon as possible.

## CLEVELAND, O

Special Correspondence to the Marine Record.

Lieut. George H. Stafford, U. S. N., in charge of the branch hydrographic office at this port, was elected an associate member of the Chamber of Commerce this week.

The Chamber of Commerce has decided to make an attempt to settle the question of the ownership of the lake front, which has been pending between the Pennsylvania company and the city. A committee was appointed for the purpose of having both the city and the company submit all its evidence, the committee to pass on the case in an impartial manner and render its decision. The members of the committee are J. G. W. Cowles, chairman; H. D. Goulder, C. A. Grasselli, W. G. Mather, Thomas Wilson, R. H. Boggis and Lee McBride.

Lake business being done at this port is now confined to the two small steamers carrying stone from Kelley's Island. Only four tugs are being operated, and these will be run throughout the winter. The repair work booked and being done at the shipyards and dry-docks is quite extensive. Last year navigation did not close until after Christmas. The Santa Maria and two other boats came in on Christmas night. The river custom house will remain open for several days.

Capt. Sam Gould has opened his school of navigation again this winter. He already has a large class of lake pilots and engineers who will receive instruction and be coached so as to pass an examination before the steamboat inspectors at this, or any other lake port.

Capt. David Vance, of Milwaukee, visited this port on Wednesday.

Although the steel steamer I. W. Nicholas, managed by Philip Minch, one of the youngest managers on the lakes, is not one of the largest class of boats that have been turned out lately, she has done as well, if not better, than any boat that was in commission during the season of 1896. She was chartered by the Anchor line at the opening of the season to carry package freight at \$1 a ton free of handling. She made twenty-eight trips between Duluth and Erie, carrying full cargoes each trip, and it is now reported that the Nicholas divided upwards of \$40,000, and the dividends paid to her owners during the season amount to between 25 and 30 per cent. She is one of the cheapest steamers ever built on the lakes. She came out in 1894 and has proved to be a good business boat. The company that owns her was organized in the fall of 1893 by Philip Minch when the outlook was far from bright.

Mr. Warren G. Tilton, chief engineer of the steamer La Salle, owned by the Lake Superior Iron Co., has reached his home at this port after laying the steamer up at Duluth.

Capt. B. Moshier, of the steamer John B. Lyon, has to his credit another very successful season's work. The entire summer was spent in the Lake Superior trade, with the exception of three trips made to Lake Michigan.

Mr. John F. Pankhurst, general manager and vice-president of the Globe Iron Works Co., intends starting for the Pacific slope within a few days. There is no business man who so well deserves a vacation as does Mr. Pankhurst, and I hope that he will enjoy himself and recuperate his health while visiting the California coast ports.

The third annual ball of the employees of the Vessel Owners' Tug Co. was held at Army and Navy hall on Wednesday evening, and was well attended. Quite a number of steamboat masters and engineers were present. The committee work was well cared for by Messrs. Lee T. Brogan, Philip Schied, Ed. Kemmett, M. McCormick, H. Montgomery, Walter V. Metcalf, J. J. Brogan, A. Westgate, M. Burns, Ed. Gorie, Willis Brown, J. J. McDowell, William Kermelly and L. F. Monroe.

The burned portion of the steamer Wallula is being cut out. It is understood that Captain Thomas Wilson, her managing owner, received \$30,000 from the underwriters. The wrecking bills were also paid by the insurance companies.

As President J. J. H. Brown, of the Lake Carriers' Association, and Secretary Charles Keep went to the Lake Carriers' meeting to begin at Detroit on January 12, that date will no doubt be selected. Captain George P. McKay has forwarded the signatures of Cleveland members, who are almost unanimously in favor of January 12.

Capt. A. B. Wolvin, of Duluth, who is becoming prominent in vessel owning circles, visited this port during the week and called on many of his marine friends.

The first meeting of the season of the Marine Engineers' Beneficial Association was held on Thursday evening last, at No. 122 Water street.

In giving the total I find about one hundred and twenty vessels laid up at this port, although there are still some entrances and clearances. The weather holding out so fine would argue in favor of the steam passenger lines continuing a little later than they have done.

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## CHICAGO, ILLS.

Special Correspondence to the Marine Record.

At Miller Brothers' shipyard the steamer City of Cleveland was in dock to have a leak stopped, repairs to stern bearing and a new blade on wheel. The steamer Olympia was in for recalking butts and repairs to stern bearing. The barge Walsted, for a general overhauling and recalking and plugging center-board box.

At the Chicago Ship Building Co. shipyard the steamer E. C. Pope is in dock, receiving several new steel plates on her bottom; the barge Hartnell was in and received some new steel plates on bottom.

At the Independent Tug Lines floating dry dock the tug Ira O. Smith was in dock for some general repairs.

J. B. Bates & Co., ship builders, have put new decks on the schooner Iron Queen.

J. J. Rardon & Co. chartered the steamer Aurora for 70,000 bushels of wheat for Buffalo at 3 $\frac{1}{4}$  cents, the highest freight paid this year. The Aurora arrived here light from Sheboygan on the morning of the 18th, and left for Buffalo in the afternoon of the 19th. John Corrigan, her owner, went on her.

The U. S. revenue cutter Calumet went out of commission on Wednesday and is now in winter quarters near Rush street bridge. She did excellent work last season, under the command of Captain John Dennett, U. S. N., who has gone to Galveston, Texas, to command the U. S. steamer Galveston, and has carried with him the good wishes of the marine fraternity of this port. Lieut. W. H. Cushing, the new commander of the Calumet, will, no doubt, during next season, continue to carry out successfully the work commenced by Capt. Dennett.

The steamer Edward Buckley, Capt. C. Grewuch, with lumber from Manistee, arrived here on the morning of the 19th.

The schooner Jessie Phillips, with slabs from Charlevoix, arrived here on the 16th.

Capt. John Isbister, who successfully commanded the steamer Josephine during the season just past, has been appointed master of the steamer Samoa for next season.

James A. Calbrick & Co. chartered the steamer Madagascar and consorts, S. M. Stephenson and Fanny Neil, all for barley to Buffalo for winter storage and spring delivery, 1st.

The Dunham Towing & Wrecking Co. towed the barge S. M. Stephenson on Monday to Armour's A. and B. elevators to load barley.

The steamer Lansing arrived here, light, from Milwaukee, Saturday, in tow of the D. T. & W. Co.'s tug, T. T. Morford.

A survey was held on the steamer L. R. Doty, recently damaged by fire, by Capt. L. Gibbs, of Milwaukee, on behalf of the underwriters, and J. B. Bates, of Chicago, on behalf of the owner. The approximate amount of damage sustained to the hull, cabin, engine room and machinery of the Doty is estimated at nearly \$15,000. The Doty will be towed to Milwaukee this week by two of the Independent Tug Lines' tugs and receive repairs at the Milwaukee Dry Dock Co.'s shipyard.

The Goodrich Trans. Co.'s steamer Indiana is being put in winter quarters at this port.

The steamer City of Duluth, Capt. MacLean, which was recently chartered by the L. M. U. S. Trans. Co. to the Graham & Morton Trans. Co., to do winter service between Milwaukee and St. Joseph, left here early Saturday morning with 1,100 tons of glucose and considerable merchandise for St. Joseph on her first winter trip. Henry Chalk, her old-time chief engineer, is still pulling the throttle on her, and Angus McPhee is chief mate.

Capt. Wm. A. Boswell has been appointed master of the G. & M. Co.'s steamer City of Louisville.

Capt. Geo. Seitz, of Manitowoc, is here with the schooner Wanderer, and has nearly sold out the 7,000 Christmas trees brought here on her. The Captain is a great hustler.

The Goodrich Company's steamers City of Racine, Atlanta and City of Ludington are doing winter service between Chicago and west shore points. The company's steamer Iowa will, as soon as necessary repairs to her machinery are completed, take the place of the City of Ludington. The company will then have three of the finest steamers on Lake Michigan doing their winter service.

The U. S. customs barge office will be open from 9 a. m. until 4 p. m. daily until January 1st, when it will be closed until further orders. Our genial deputy collector, James M. Nash, is doing day duty alone, Inspectors Frank Weidinger (the boys' Frank) and Capt. C. Smith having been transferred to the Upper House.

At a meeting of the Masters' and Pilots' Harbor 33 Chicago, held at their lodge room last Thursday afternoon. Captains R. A. Davis and James Comstock were initiated as new members. The old captains were let off easy, and did not suffer any bodily harm at the hands of the inquisitors.

WILLIAMS.

## PORT HURON, MICH.

Special Correspondence to the Marine Record.

Dunford & Alverson are at work on the barge Rosa Sonsmith. She will have new ceiling, new cants and frames forward and aft, and a thorough overhauling, and rebuild.

The steamer Argonaut is in the lower dock to be recalked. There will also be extensive repairs made on the Leuty and Botsford.

There is quite a large fleet laid up here, and there will surely be some work for the ship-yards to do during the winter and spring.

Ed. J. Kendall, the marine reporter, has moved to his uptown office in the Stewart Block, with E. F. Percival, the real estate agent.

The steamers Mory and Arundell make daily trips to Algonac and Detroit, with no ice to bother them. The weather is fine. Average for the last week is about four degrees below freezing.

The steamer Aurora is due soon from Chicago, with grain for Buffalo. She will have no trouble in making the run.

The wife of Capt. Will Hutchinson is very low, at the residence on Seventh street.

About all the sailors are home for the winter.

Capt. A. B. Slyfield says: "Monday's river column had an item saying a judgment had been rendered in Detroit, on Monday, for \$500 and \$70 costs against the White Star. I have a receipt in full against the White Star and master from Mrs. Sibley. She has heretofore done the same thing on other boats. My attorneys failed to notify me in time, so she got a judgment by default. I have taken steps to have the judgment set aside. Please give this space in your paper for the benefit of my friends."

## A NEW LAKE PORT.

Secretary Lamont has transmitted to the House a report by Major Sears, corps of engineers, U. S. A., on the preliminary survey of the harbor at Port Wing, Wis. This harbor is situated on Flag lake, about three-quarters of a mile within the entrance of Flag river, on the south side of Lake Superior. Major Sears reports that the citizens of Port Wing have expended about \$1,900 in building piers and dredging out between them and for 1,000 feet inside the lake. This channel is in good navigable condition and permits vessels drawing thirteen feet to get in. He says that the industries of the locality are growing and that the entrance to the harbor will make an ideal harbor of refuge in the future, and recommends that a complete survey be made whereon to base a project and estimate for a permanent improvement. The recommendation is approved by the chief of engineers.

## BUFFALO HARBOR.

The Buffalo harbor commission has recommended to the mayor of that city that legislation be had to divert the so-called seawall strip for street purposes; that proceedings be taken to secure additional land along the lake front to furnish further harbor facilities and to construct one or more bridges, with other bridges across the river and canal connecting the territory north of the river with the lake front.

**WHAT DETROIT MEN THINK.**

The Detroit Evening News, canvassing the vessel-owners' opinions of that port, gives the following interviews:

**Manager L. C. Waldo, of the Northwestern Transportation Co.—**Contracted boats made a fair rate of interest on the amount invested. Others did not. If furnaces begin operation and the docks are cleaned up, there will be a dollar rate next year.

**Capt. James W. Millen, of Parker & Millen—**As a whole, vessels have not made 5 per cent. on the investment.

**A. A. Parker, of the same firm—**Lake underwriters have made a little money this year, it seems now. It is too early, however, to speak positively, as vesselmen have 30 days in which to report losses and they may report enough yet to eat up all the profits.

**John Stevenson,** who, from being connected in various ways with different kinds of boats, is well qualified to make comparative statements—The short lines made a little profit, as they always do. They never make big profits and they are affected very little by business conditions. From the first of July until after the election, package freight traffic generally was very poor, but after the election, it was better than usual. We are preparing for a larger business next year.

**Traffic Manager C. F. Bielman, of the Star Line—**The number of travelers over our line, who might be classed as pleasure seekers, decreased, owing, I think, to the business depression. Six thousand fewer went from Detroit to the Flats than usual. The number of business travelers about held its own. There is a tendency towards a gradual increase in the traffic to the up-river towns as those places grow in population.

**Ashley & Dustin—**Considering the season, our passenger business has been very fair. We have found that years of presidential elections are always poor for the passenger business. We carried less fruit than usual, on account of there being so much cheap fruit in Michigan that it was unnecessary to bring a great deal from the islands. That's a business which depends entirely on the comparative conditions of the fruit crops in this state and on the islands.

**General Manager Carter, of the D. & C.—**We had a very successful season in every regard. After August 1 we felt the effect of the political situation in the decrease of freight. The cheap rates between this port and Cleveland increased the volume of business during the latter part of the season, but not the profits. Money is coming out of its hiding places and we are confident of having a good season next year.

**Thomas Adams,** in his usual hopeful manner—Vesselmen seem to forget that the profits of the lake fleet are largely dependent on the condition of trade generally. Business is resuming its normal, healthy condition and I see nothing discouraging in the prospects for the future. I've sometimes wondered whether some vesselmen weren't in the habit of talking gloomily about marine matters in the hope of preventing possible competitors from building new vessels. We've experienced bad depressions before, but they were followed by booms.

**Manager Grummond, of the Grummond Line—**We did a fair business this season. People didn't travel about much if they didn't have to. Next season we'll have a daily service between Detroit and Cleveland and a semi-weekly service between Toledo and St. Ignace.

**General Agent Clark, of the Northern Steamship Co.—**Our passenger boats made five fewer trips than usual, but the earnings were considerably greater. From the two previous years' experience, we learned things about running the boats that were of much profit to us this year. In the last eight weeks of navigation we had more package freight than we could take care of. Aside from the rush in package freight, we had large consignments of steel rails, nails, spikes, etc., to be delivered at the coast, for shipment to Japan. We had from four to eight boats chartered all season and kept them busy.

**Wm. A. Livingston—**There are isolated cases in which profits have been made, but as a rule not much was made unless the boats had good shore connections. If the depression of vessel stock is considered, nothing was made, on the whole. Such a firm as Pickands, Mather & Co., for example, made much money, however. They have various interests that help one another out—such as fueling plants at Buffalo, Cleveland, Ashtabula and the Soo; furnace interests, and superior advantages for loading and unloading, which give their boats better dispatch. Then, by having the control of so many vessels, they are able to buy supplies more closely. The matter of perhaps

\$7,500 in fuel bills for each vessel is reduced considerably by their fueling them themselves. Vesselmen's predictions, as a rule, don't amount to much, but it seems to me that business will revive so much by next year that increase in tonnage and deep water cannot prevent good rates. Owners generally expect better insurance rates next year and more favorable policies.

**Capt. Eber Ward—**Since foreign companies came on the lakes six or seven years ago, underwriters have made little money and I do not look for lower rates. There might be a decrease through a fight between the companies, but such a thing is unlikely. There have been few total losses this year, it's true, but they are rather a small element, after all. It is the general averages that count. A big steel vessel goes on some place, and it is reported that she will have to take a plate out. But when she reaches the dry dock it is frequently found that she is ripped open for 20, 30 or maybe 40 feet, and has broken frames. This is what makes the average expensive.

**FOR THE CONSERVANCY OF MILWAUKEE HARBOR.**

The secretary of war has transmitted to the house of representatives a copy of the report of Capt. Zinn, corps of engineers, U. S. A., in charge of the improvement of Milwaukee harbor. The report gives the results of a survey with the view to obtaining a twenty-one-foot channel in the harbor. The proposed method for doing this is to dredge the present channel to the width of 225 feet between the piers and 600 wide from the pier heads to the twenty-one-foot contour in Lake Michigan. Capt. Zinn says that the harbor in Milwaukee is naturally sheltered by the headlands and the breakwater affords additional shelter from northwesterly storms, which are the most severe in that part of the lake.

Capt. Zinn says the present project calls for a channel nineteen feet deep, and it is believed that the material of the bottom to a depth of twenty-one feet is composed chiefly of clay, overlaid with from one to two feet of sand. He says there is no appreciable littoral drift at Milwaukee harbor from the facts, first, that there is no bar formation at the outer end of either pier, and second, that there are no shore accretions in either side of the harbor to any great extent. The discharge from the Milwaukee harbor is not very large. The city sewers empty into it, however, and there is always more or less sediment brought down and deposited in the channel.

"In order to obtain a permanent channel twenty-one feet deep at the harbor of Milwaukee, it will be necessary first to dredge to that depth in the present channel from the river to the twenty-one-foot contour in the lake; second, to maintain in the channel either by annual dredging or by protection on both sides by piers or by both of these means."

It is estimated that to obtain a channel twenty-one feet deep and 225 feet wide will require the removal of 58,000 cubic yards of material, of which 10,000 cubic yards are beyond the present pier heads. Six hundred feet of this channel will be unprotected by the present piers and therefore subject to littoral drift and other action along the bottom. To prevent this by extending the present piers will cost, at the rate of \$65 per foot, \$58,000 for the 600 feet.

It is impossible to determine without a series of annual observations the rate at which the channel would shallow if unprotected by piers, but it would not be much greater than the average annual amount given, or about 13,700 cubic yards. If the channel should be deepened to twenty-one feet without extending the piers, another fact must be taken into consideration. Washing from the sides of the dredged channel would undoubtedly occur immediately and continue until the slope became quite flat, perhaps equal to the natural slope of the lake bottom, and the channel would be endangered to some extent. To provide against this the channel beyond the pier heads should be made much wider than that between the piers. The width of 600 feet will be ample.

Who wouldn't sell a farm and go to sea?—Coast Seamen's Journal, San Francisco.

Well! The Record can tell you that quite a number who desire to wear out their old clothes. Had not want enough ashore. Never hauled out to leeward with a strand of manilla yarns round their necks for a muffler, or never was off soundings, would, perhaps, be in a position to plow water instead of land. Ordinarily, it is not want that sends people to sea, unless they get too much of it ashore.

**CHANGE OF BROKERS IN HANDLING IRON ORE.**

A circular from S. S. Curry, president of the Metropolitan Iron & Land Co., announces the appointment of Pickands, Mather & Co., of Cleveland, as general agents for the company for handling and sale of the Norrie and Pabst ore, formerly managed by the firm of E. C. Pope & Co. The circular adds that by a mutually satisfactory arrangement Mr. Pope will hereafter be associated with Pickands, Mather & Co. The Norrie and Pabst mines are capable of producing 1,000,000 tons of ore annually, and this agency will, of course, be a big acquisition to the business of Pickands, Mather & Co., who are already handling as much ore as the largest of the Cleveland agencies, and are operating about forty steel boats.

The big Norrie mine, which is on the Gogebic range, has been handled by E. C. Pope & Co. for a number of years and is one of the largest producers in the Lake Superior district. For the season of 1896 the Norrie was allotted 800,000 tons by the Ore Men's Association, but less than half that amount was shipped. During the season just closed about 650,000 tons of ore were mined at the Norrie and a little more than half of that amount was sent forward, so that there is about 300,000 tons of a stock pile at the mine now. Most of the ore is sent forward from Ashland, but some Michigan shipments are made by way of Escanaba.

**THE NEW CANAL BOAT LINE.**

Erastus Wiman is asking the New York dock commission for privileges in connection with his canal boat line, which he calls the Consolidated Canal & Lake Company.

He exhibits contracts from C. A. Pillsbury, B. C. Church and many other millers, in which they agree to ship direct for export to New York via Buffalo, through the Consolidated Company, all the way up to 900,000 barrels of flour annually. Furthermore, the new company, he said, had such men as C. A. Pillsbury, B. C. Church, F. B. Underwood, E. A. Young, ex-Mayor Edson, J. A. Cormack, F. W. Clarkson and Samuel Hart behind it.

They intend to build a large fleet of boats suitable for the lake trade and the enlarged Erie canal, and agree to carry freight direct from the center of the continent to New York. The rate of freight from Buffalo to New York will be 45 cents per ton, or 1 mill per ton per mile. The charge of the storage and transfer to ocean vessels will not be more than 25 cents per ton. Mr. Wiman estimated that the company would eventually handle 10,000,000 barrels of flour annually for export. If the company in any year carries less than 100,000 tons of freight they agree to forfeit their lease. It is thought that the lease will be obtained.

**IRON MINING.**

Upon the Mesabi range the Oliver mine is getting ready to dig out 1,000,000 tons of ore for shipment next season. The product of the Oliver during the past season aggregated 800,000 tons, the cost of which, not including the stripping of the surface dirt, is placed slightly under seven cents per ton. This figure, as a factor in cheap iron ore mining, is somewhat remarkable, as it is well known that in ordinary underground properties the cost of mining iron ore is usually over \$1.00 a ton, and on top of this comes in the one or more royalties paid to the original prospectors or present owners of the mines. In this connection we may say that the Oliver is an open cut mine and gets out the ore exclusively by the use of steam shovels.

**LIFE SAVING STATIONS CLOSED.**

The life-saving stations at Erie, Buffalo and Cleveland were closed last week. There were a few boats on Lake Erie running to their port of destination, but general chartering and lake traffic had ceased. The life-saving stations of Lake Ontario were closed on Saturday last, so also were both the new and old Welland canals, and it may be said that an entire closing down of navigation took place with the stoppage of Lake Erie traffic.

On a recent trial trip of the *Misiones*, another of the Argentine armoured torpedo-boat destroyers, built by Messrs. Yarrow & Co., London, a three hours' full speed run was made, loaded with 35 tons, when a mean speed of 27.1 knots was realized, being 1.1 knots in excess of the contract speed of 26 knots. Steam was supplied by six Yarrow's patent water-tube boilers.

## CHARTS PUBLISHED

BY THE UNITED STATES HYDROGRAPHIC OFFICE, GULF AND  
RIVER ST. LAWRENCE AND THE GREAT LAKES,  
SINCE DECEMBER 15, 1895.

TITLE.	AUTHORITIES, SURVEYS, ETC. Date of publication.	Date of last correction.
The Great Lakes: South Chicago.....	From a Survey in 1892 by the U. S. S. Michigan.....	1896
Cleveland Harbor and Approaches.....	From a Survey by the U. S. S. Michigan in 1895.....	1896
Lake Huron, Georgian Bay Little Current to French River and Cabot Head ....	From a Canadian Government Survey in 1884-1885..	1896
Kingsville Harbor, Lake Erie .....	From a Canadian Government Survey in 1895.....	1896
Goderich Harbor, Lake Huron.....	From a Canadian Government Survey in 1895.....	1896
Detroit River.....	From a Survey in 1892 by the U. S. S. Michigan.....	1896
St Mary's River; Mud Lake Channels.....	From U. S. Lake Survey Charts .....	1896
Pelée Passage .....	From a survey in 1895 by the U. S. S. Michigan.....	1896
Parry Sound to French River	From Canadian Government Surveys in 1886, 1890, 1891.....	1896
Cleveland Harbor and Cuyahoga River, Ohio, Lake Erie .....	From a survey in 1895 by the officers of the U. S. S. Michigan.....	1896

## ANOTHER NEW CONTRACT.

It has already been stated in The Record that Mr. John L. Crosthwaite and others were to build a new steamer. The following dispatch from Bay City refers to it: "F. W. Wheeler & Co. have closed a contract with Lewis H. Hall and other Buffalo parties for a steel steamer, to be 280 feet keel, 40 feet beam, and 20 feet hold. She will have a triple expansion engine and two boilers. The contract calls for her completion in May, 1897."

Mr. Crosthwaite, of Buffalo, states that the dimensions are somewhat incorrect, as she will be 300 feet long, 42 feet beam and 24 feet hold, to cost about \$160,000. Lewis H. Hall lives in New York and is a member of the Export Lumber Company.

## NAVAL POWER.

According to statistics it appears that there have been launched between January 1, 1876, and June 30, 1896, thirty-five British, twenty-six French and fourteen Russian battleships; building and ordered then, seven British, three French and four Russian battleships. This gives a total of modern battleships built and building of forty-two British, twenty-nine French and eighteen Russian.

But the battleship of today is in a very different relative position from the line-of-battle ship of a century ago. The old maxim was that nothing but a line-of-battle ship could beat a line-of-battle ship, and hence a fleet of ships defied anything but an equal fleet of ships. As Admiral Colcomb says, it was in virtue of this particular quality that British ships swept and kept the sea. It is quite impossible to say this of the modern battleship. To go no further than the action of the Yalu, we see all classes of ships going into a general action which would have been restricted to the line-of-battle ships in old days.

This makes the naval strength of England still less satisfactory, as compared with that of France and Russia united. The nearest parallel that Capt. Eardley Wilmot can find to the present situation is that of 1778, when England had a superiority over France and Spain combined of ten line-of-battle ships. But this superiority was not sufficient to enable England in that year to keep command of the sea, and she had to make peace. In supporting this measure Pitt said: "If the war continued we might lose Jamaica," and he added, "a defensive naval war can only end in inevitable defeat."

About \$10,000 will be spent during the coming winter on ore dock No. 4 on the lake shore side of Ashtabula, which has been known as the Superior dock, and which was recently leased in the interest of J. D. Rockefeller. Machinery on this dock, which will be improved consists of a Brown hoist of six legs, six McMyler rotary hoists and six hoists by the Variety Iron Works of Cleveland.

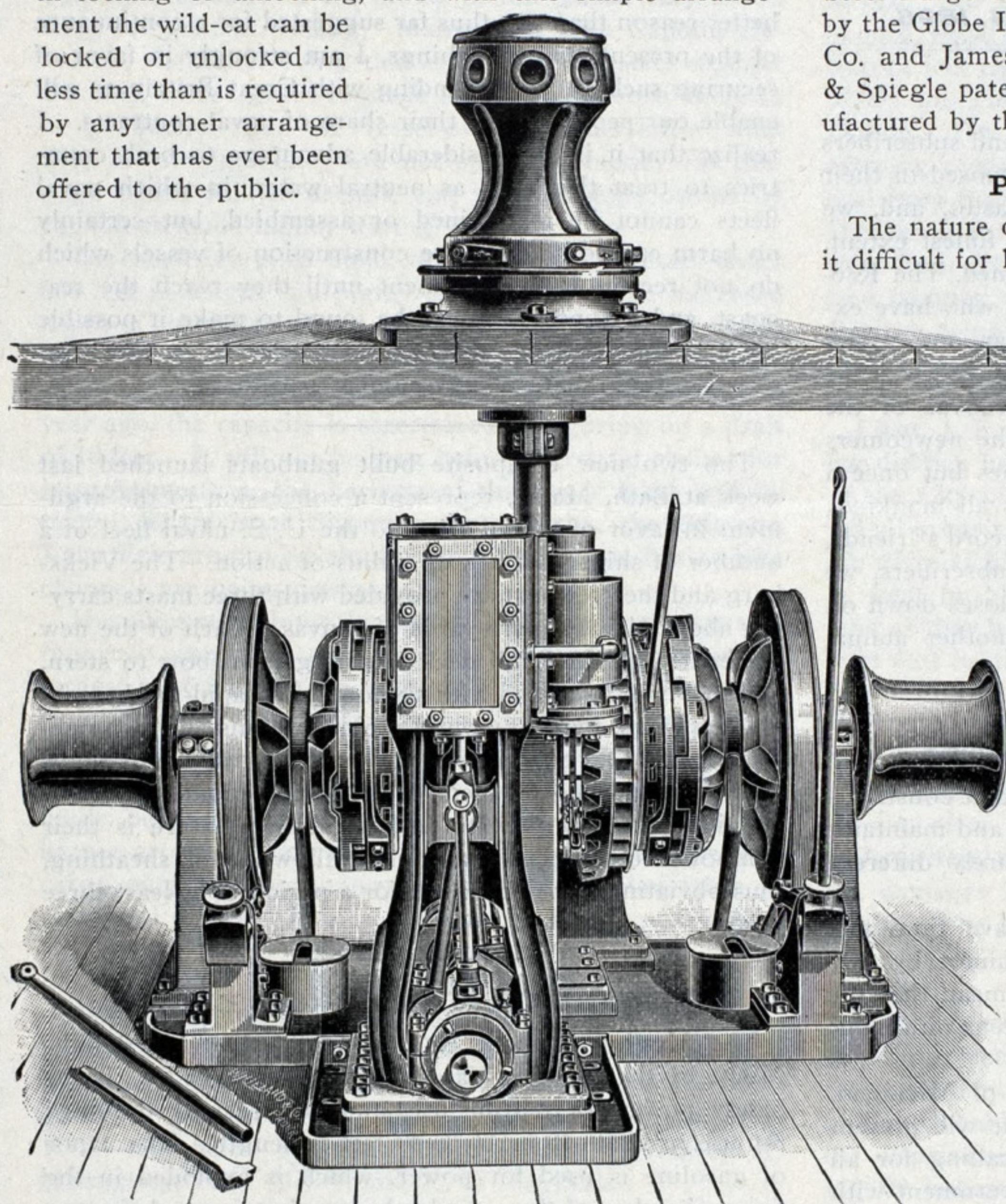
## A WESTERN SHIPMENT.

Four hundred car loads of flour en route to the seaboard were on the railroad tracks at Gladstone, Mich., a few days ago, and the Ann Arbor car-ferry steamers will transport this produce across the lake for shipment east.

## A MODERN WINDLASS.

"PROVIDENCE" STEAM CAPSTAN WINDLASS, NEW STYLE  
MANUFACTURED BY THE AMERICAN SHIP  
WINDLASS CO., PROVIDENCE, R. I.

The accompanying cut shows the latest Providence steam capstan windlass, embracing all the recent improvements made by the American Ship Windlass Co. By this cut it will be seen how well supported the machine is at all points where the greatest strain comes in actual use. It will be seen that the wild-cat or chain wheel is solid up against the side bitt, and that the friction band is on the side of the wild-cat next to the bitt. The effect of this is that when sudden and severe strains come on the windlass, which are certain to come when in actual use in rough weather, it is impossible to bend the shaft in any way, on account of the wild-cat having such a solid support against the side bitt; and the only way in which the windlass could be disabled through the shaft is by the sheering of the shaft completely off, which any one acquainted with such matters can see is impossible. This arrangement insures a safe result under all strains, as the shaft cannot be bent, and prevents all of the many accidents to windlasses which result from bending of the shaft. If the shaft remains intact, then it is almost impossible to break the windlass. The locking gear is so simple that any seaman can understand it, and can see what he is doing in locking or unlocking, and with this simple arrangement the wild-cat can be locked or unlocked in less time than is required by any other arrangement that has ever been offered to the public.



Patented June 1, 1880; Feb. 15, 1881; May 1, 1883; July 31, 1885,  
and July 2, 1889.

In a former article, given in these columns, we gave a description of the "Providence" steam capstan windlass, manufactured by the American Ship Windlass Co., of Providence, R. I., showing the advantages which this windlass possesses over anything in that line made anywhere in the world. There is one point, however, which was overlooked in that description which adds materially to the value of the windlass, because it makes it more adaptable to the work it has to do. The capstan barrel in the "Providence" capstan windlass runs three times as fast as the gypsy ends; so that while the gypsy ends are the best for heavy, solid pulls, the capstan is the best for taking in slack line and for light pulls; but in addition to the fast purchase on the capstan, it also has a slow purchase with more power by putting the steel gears in the base.

The great advantages of this windlass over other styles in the market had led to its general adoption throughout the country, and the "Providence" steam capstan windlasses, as shown in the above cut, will be used on the following vessels now building on the lakes:

Steamer "Ramapo," building by the Union Dry Dock Co., Buffalo, for the Union Steamboat Co., Buffalo.

Steel barge No. 81, building by the Union Steamboat Co. for the Standard Oil Co., of New York.

Steel freight steamer, building by the Cleveland Ship Building Co., for Capt. Thomas Wilson, Cleveland.

Steel freight steamer, building by the Cleveland Ship Building Co., for A. B. Wolvin, Duluth.

Steel tow barge, building by the Chicago Ship Building Co. for James Corrigan, Cleveland.

Steel tow barge, building by the Chicago Ship Building Co. for C. W. Elphicke, Chicago.

Two steel freight steamers, building by the Chicago Ship Building Co. for R. R. Rhodes, Cleveland.

Steel freight steamer, building by the Chicago Ship Building Co. for A. B. Wolvin, Duluth.

Steel tow barge, building by F. W. Wheeler & Co., West Bay City, for the Bessemer Steamship Co., Cleveland.

Steel tow barge, building by the American Steel Barge Co., West Superior, for the interlake T. Co., Cleveland.

All the above vessels have the "Providence" capstans aft, and Barge No. 81 for the Standard Oil Co., the steel tow barge building for C. W. Elphicke by the Chicago Ship Building Co., the steel tow barge, building by F. W. Wheeler & Co. for the Bessemer Steamship Co., the steel tow barge, building for the Interlake Co. by the American Steel Barge Co., and also the steel tow barges building by the Globe Iron Works Co. for the Bessemer Steamship Co. and James Corrigan, Cleveland, will have the Shaw & Spiegler patent automatic steam towing machines, manufactured by the American Ship Windlass Co.

## PENSION FOR SAILORS.

The nature of the sailor's calling has hitherto rendered it difficult for him to make provision by insurance for old age or death, and, realizing the hardship this entails, The White Star Line, of Liverpool, has determined to render assistance by establishing a system of like assurance and superannuation, towards which the company and its officers mutually contribute, the latter by payment out of their bonus. Officers of the White Star fleet are thus enabled to look forward to a substantial allowance on retirement, as well as to a payment after their death to those who may have been dependent upon them. This new arrangement has been in operation since the 1st of January, 1895, and solves a problem which has always been more or less of a difficulty with a class of men exceptionally in need of the benefits to be derived from insurance. To illustrate the advantages this arrangement will confer, it may be stated that a White Star Line commander 33 years of age will be entitled, on attaining the age of 60, to an allowance of £298 8s., approximately \$1,550, per annum, and upon his death, whenever that may happen, the sum of £2,984, say \$15,000, will be payable to his family or legal representatives.

## ELECTRIC TUGS.

The proposed new departure in the propulsion of tugs by electricity on the river Spree, at Berlin, is assuming practical shape. The scheme is to establish a service of tugs on the seven and one-half miles of the river which passes through the capital, by connecting the boats to a trolley line. The present freight charge for covering the distance is \$7.50, but it is estimated that by the aid of electricity this charge will be reduced about one-half. The success of such a scheme would be quickly reflected in this country, where the use of electric launches for both pleasure and commercial purposes has been retarded from the fact of the scarcity of charging stations for the renewal of the necessary storage batteries. As soon as people begin to find that they can be fairly sure of being able to recharge their batteries whenever they are in the neighborhood of a trolley car line, an extraordinary impetus will be given to the summer business in electric launches.

## WINTER NAVIGATION.

The steamers J. C. Ford and George Farwell have entered upon their winter's work between Manitowoc, Keweenaw and Frankfort.

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## CHRISTMAS GREETING.

Before we go to press again our patrons and subscribers will have eaten their Christmas dinners, disposed of their leisure time as best suited their various tastes, and, we trust, enjoyed the occasion to its, or their, fullest extent. So far as the foregoing remarks are concerned, The Record would like to join hands with all those who have extended their courtesies to us during the year, and, as we keep on making friends, we trust that we may be given the level-headed good sense to so trim the canvas of the Record as to retain the old and welcome the newcomers to our columns and pages. Christmas comes but once a year; it is the season of good will towards all mankind; may happiness and good cheer await The Record's friends, and, in wishing good to our patrons and subscribers, we assure them that the crew of the old craft closes down on Christmas eve, well pleased to welcome another annual festival of friendship and prosperity.

## NAVAL VESSELS ON THE LAKES.

We have on several occasions pointed out that constructing hulls of vessels at the several lake ports and maintaining a naval fleet on those waters are entirely different matters.

The treaty of stipulations, which we have time and again printed in full in these columns, cannot by any stretch of the imagination be construed to mean that the art of shipbuilding was to be denied the citizens of a number of our most important States.

In this connection Congressman Smith, of Michigan, has drafted an important resolution which he will present in the present House of Representatives, calling for all the information in the possession of the government with regard to the agreement between the United States and Great Britain under which the shipyards of the Great Lakes are prevented from competing with those of the Atlantic and Pacific seacoast for the construction of war vessels. It was recently stated that a movement was on foot looking to the abrogation of this agreement, and Mr. Smith's resolution is intended to supply congress with the fullest information regarding the international questions involved before action is taken by either house. The full text of the resolution of inquiry is as follows:

"Whereas, the secretary of the navy has decided that contractors owning or managing shipyards on the Great Lakes are not eligible to bid for the construction of war vessels, because of the existence of a prohibitory agreement between the United States and Great Britain, therefore,

"Be it resolved, by the House of Representatives: That the secretary of state be and hereby is requested, if not incompatible with the public interest, to report to the House the status of the agreement between the United States and Great Britain said to prohibit the building, arming or maintaining of more than a single war vessel on the Great Lakes, such information to include all data bearing upon the subject now in the possession of the department."

Mr. Smith's resolution will be referred to the committee on foreign affairs, where he will have an opportunity of

urging a speedy report upon it. Under the rules of the House, however, should the foreign affairs committee fail to report the resolution within one week, it can be called up as a privileged matter by any member. The clause, "if not incompatible with the public interest," was included by Mr. Smith out of courtesy to the secretary of state, as it is not his desire to embarrass the department by calling for information which might involve disclosures that would jeopardize the status of other negotiations. In discussing the resolution, Mr. Smith is quoted as saying:

"I have observed with much regret that the navy department has ruled that our shipyards on the lakes could not compete with those of the seacoast even for the construction of light draft vessels, such as torpedo boats, gun-boats, etc. The text of the original agreement with Great Britain regarding the naval force to be maintained on the lakes does not agree in all its details with the understanding which is maintained today. For this and for other reasons I have deemed it only proper that the department should be requested to furnish congress with all the information possible before any action is undertaken. There should certainly be a very good reason for maintaining an agreement which prevents our shipyards from constructing even the hulls of war vessels, for the facilities which our shipbuilders are rapidly acquiring are second to none in the country. Our entire section has been discriminated against for many years, and unless there is a better reason than any thus far suggested for a continuance of the present status of things, I am strongly in favor of securing such an understanding with Great Britain as will enable our people to get their share of naval contracts. I realize that it is of considerable advantage to both countries to treat the lakes as neutral water, in which naval fleets cannot be maintained or assembled, but certainly no harm can come from the construction of vessels which do not receive their armament until they reach the seacoast, and I hope a way can be found to make it possible for Michigan and her sister states bordering on the lakes to enjoy their share of government patronage."

The two new composite built gunboats launched last week at Bath, Maine, represent a concession to the argument in favor of the addition to the U. S. naval fleet of a number of ships with a wide radius of action. The Vicksburg and the Newport are provided with three masts carrying about 11,500 square yards of canvas. Each of the new gunboats has three full decks running from bow to stern, and they will be armed with six four-inch rapid-fire breech-loading rifles, four six-pound rapid-fire guns and two one-pounders. The quantity of canvas these two handy ships carry will permit of them cruising for months without running into any port to fuel. Another feature is their composite construction and the yellow metal sheathing, thus obviating dry-dock work for a period of at least three years.

## THE MONITOR MARINE GAS ENGINE.

The Monitor Launch Engine, built at Grand Rapids, Mich., by the Monitor Vapor Engine & Power Co., is the handy power for marine use, and is especially designed for use in boats from 14 to 40 feet in length. The vapor of gasoline is used for power, which is exploded in the firing chamber of the cylinder by an electric spark from a small chemical battery, regularly each revolution. The Monitor Engine is absolutely safe, for there is no vapor of water, gasoline or naphtha under pressure, no storage of pressure, for there is no boiler or retort, therefore with no possibility of explosion. The engine occupies but a small space at the stern, is easy to manage, and not liable to derangement, on account of its extreme simplicity. It is very simple in construction, which should commend it to those having little knowledge of machinery, and to any it will be apparent that the avoidance of complications reduces the liability of derangement. Experience has proved beyond question that the electric igniter is the best and most practical igniter for boat use. It cannot be extinguished by wind, and is always ready for use by simply turning the switch, and no accidents can possibly happen, should gasoline, by carelessness, get free in the boat. The engine is always ready to run when connected to tank and battery, and full power is developed in a few seconds. With no fire to light and maintain, no external fire, no pressure to be raised, no gasoline or other inflammable oil in or near the motor, we are safe in saying that the Monitor is one of the safest launch engines which can be devised.

## LAKE ERIE RECEIPTS OF IRON ORE.

Though there were expectations that the end of ore-shipping would come early this season, the usual effort to make an extra trip appeared, and some boats were loaded as late as Dec. 3 at Escanaba and Marquette. Last year the last boat was loaded at Escanaba on Dec. 7. In the figures below, all ore that arrived at lower lake ports after Dec. 1 is added to receipts reported to that date, so as to give the season's record, and the figures for stocks on dock are those for Dec. 1. The aggregates appear thus:

Receipts at Lake Erie ports, season of 1896..... 8,026,432 tons.  
On dock at Lake Erie ports, Dec. 1, 1896..... 4,954,984 tons.

The figures gathered by The Iron Trade Review in May showed that there was on dock at Lake Erie ports at the opening of navigation this year ore to the amount of 1,949,698 gross tons. Thus the shipments to furnaces in the seven months from May 1 to Dec. 1, together with the consumption by furnaces at Tonawanda, Buffalo and Cleveland, receiving ore direct into their yards from vessels, have been 5,021,146 gross tons, against 6,339,496 gross tons in the same period last year, 4,104,948 tons in 1894, 3,358,148 in 1893, and 4,048,471 tons in 1892. The table below gives in the first column the receipts at all Lake Erie ports in the season just closed, and for purposes of comparison, the receipts for the preceding five years are shown also:

IRON ORE RECEIPTS AT LAKE ERIE PORTS, GROSS TONS.

PORTS.	1896.	1895.	1894.	1893.	1892.	1891.
Toledo.....	301,794	260,730	158,384	145,515	139,987	191,105
Sandusky.....	58,667	12,361	23,043	4,464	49,736	106,907
Huron.....	226,515	146,442	172,775	137,700	65,000	14,910
Lorain.....	191,445	214,219	150,424	165,667	190,400	266,009
Cleveland....	2,313,170	2,312,370	1,624,573	1,260,716	1,950,224	1,257,775
Fairport.....	941,446	914,617	976,222	792,517	866,611	699,434
Ashtabula.....	2,272,822	2,474,791	1,987,722	1,845,738	2,555,416	1,599,785
Conneaut.....	327,623	244,967	237,905	203,207	1,130	.....
Erie.....	847,849	811,989	624,438	469,299	645,230	393,759
Buffalo*.....	545,101	719,742	395,339	308,238	197,000	410,000
Ton'w'nda.....						
Total.....	8,026,432	8,112,228	6,350,925	5,333,061	6,660,734	4,939,684

\*Buffalo alone to 1893.

The noteworthy fact about the above figures is that Cleveland has again obtained the lead as an ore-receiving point, among the ports of Lake Erie. In 1888, this pre-eminence, which Cleveland had held for years, was lost to Ashtabula, and has never been regained until the present year.—Iron Trade Review.

## OBITUARY NOTICE.

Capt. Moses W. Humphrey, well known on the lakes as one of the pioneer seamen, died last Thursday night at the residence of his son, Capt. Moses W. Humphrey, Jr., 409 Congress street east, Detroit. He caught cold about three weeks ago, but his physician did not consider his illness serious. On Thursday evening he joined the family at the supper table and partook of a light meal, afterwards going to his room, where his son sat with him all evening. He suffered from difficulty in breathing, but after taking a stimulant seemed easier and fell asleep. He did not wake again, but about half past 10 his son noticed him gasp, and this was repeated a little later. Shortly afterwards he breathed his last.

Capt. Humphrey was born at Ashtabula, O., June 21, 1819. He began sailing in 1835, and his first command was the sloop Geneva, followed by the DeWitt Clinton. Early in the 40's he spent two years boating on the Mississippi, after which he returned to the lakes and fitted out and sailed the schooner Oleander. He continued sailing up to 1861, excepting only two years, commanding in succession the brig Europe out of Chicago, the bark Mary Stockton, the brig Shakespeare and the bark E. B. Morgan, which latter he owned and sailed nearly four years. In 1861 he removed to a large farm he owned, about forty miles from Chicago, and lived on that until 1868, when he sold it and went into the grain business at Peotone, Ill. Early in 1872 he sold out his grain business and moved to Iowa, where he remained two years, and returned to the lakes to command the schooner Conneaut for two years. Then he went to Kansas, where he lived on a farm until about three years ago, when he settled in Detroit, where he has lived ever since with his son. His wife died three years ago this fall in Detroit, and the only child of this couple is the son at whose home Capt. Humphrey died. The funeral took place on Monday.

The Marine Record is informed that the U. S. engineer's office at Burlington, Vt., was closed up and abandoned Dec. 1st. This information comes to us from U. S. Assistant Engineer F. M. Barstow.

**TO RE-CLASSIFY PORTS OF ENTRY.**

Congressman Towne, of Duluth, Minn., will work on legislative changes looking towards a re-classification of ports of entry. It is conceded that there is a necessity for reorganizing the customs districts by abolishing a large number of ports of entry for which commerce makes no demand. The last report of the supervising special agent of the treasury shows that fifty-four ports of entry are annually appropriated for, at which the collections are less than the cost of maintaining the port. In several cases the expense to the government is over \$200 for every dollar collected, and a significant feature of the situation is the fact that the New England section contains about four times as many of these unnecessary ports as all the rest of the country combined. The great lake region has very few ports, although its commerce is heavy. Mr. Towne has been working on this problem for some time, and after trying various methods of bringing the abuse to the attention of the ways and means committee he has drafted the following joint resolution:

"Resolved, that the secretary of the treasury be and hereby is authorized and directed to prepare and report to the first session of the fifty-fifth congress for its consideration and action a plan for the consolidation and rearrangement of the customs districts of the United States with a view to increased efficiency and economy of administration, and including a classification of salaries to be paid in said proposed districts."

Sec. 2. That the expenses necessarily incurred by the secretary of the treasury in pursuance of this resolution shall be paid out of the general appropriation for the collection of customs.

"My attention," said Mr. Towne, "was first drawn to this question by an examination of the department maps showing the customs districts. I was surprised to note that the districts were shown on two charts of equal size, the first representing all the customs districts outside of New England, while the second, drawn on a scale many times larger, was exclusively devoted to the New England ports. On the latter chart the ports of entry were sprinkled about with the greatest profusion, while on the first map the ports were so far apart and the customs districts so extensive as to make it a cause for wonder that commerce should be carried on upon a strictly business basis. In this connection it is interesting to remember that at the last session it was found necessary to pass a bill to remove the port of Aurora, Ill., from the customs district of New Orleans, in which it had previously been, to the district of Chicago.

"There are three important divisions in the work of reform as contemplated by my measure. First, the abolition of unnecessary ports of entry and the consolidation of others where possible; second, rearrangement of customs districts in accordance with the commercial necessities of today; and, third, the reclassification of employees and the readjustment of salaries. If this form is conscientiously carried out I am satisfied that it will not only save a large sum of money, but it will redound greatly to the advantage of the commerce of the country."

**FLOTSAM, JETSAM AND LAGAN.**

A lodge of marine engineers has been organized at South Haven with twenty-five members. The president is W. Tyler; secretary, Fred. Lincenmyer. The association will be known as the Marine Engineers' Benevolent Society.

During the winter the American Steel Barge Co. will put repairs to the extent of \$12,000 on the whaleback steamer Colby, which came up from the Atlantic ocean. Her engines will be extensively repaired and a steel water bottom will also be put in.

During the season of 1896 the passenger steamer City of Cleveland made 112 round trips, and the City of Detroit, which came out earlier and ran a little later, has a total of 125 trips, one trip more than has ever been made by any boat in the line before; 1893 came nearest with 124 trips.

At the west yard of the Milwaukee Drydock Co. the steamer J. C. Ford is in the stationary dock, being calked and ironed for winter service between Keweenaw and Frankfort. The Ford is to cover this route in company with the George Farwell, the A. L. Hopkins in some manner having been lost in the shuffle.

Lester, of Marine City, has the work on the Mark Hopkins, which was sunk by the Vanderbilt in Hay lake during 1895, and was subsequently raised and brought down, the damaged hull having been entirely rebuilt. Carpenters

are now finishing the cabins, and machinists are setting up the engines. She will be equipped with two pole spars, steam hoists, steam windlass, capstans, steering gear and everything necessary to make up a modern single decker.

The steamer William A. Haskell on Oct. 7, 1896, struck a supposed shoal in Lake Michigan midway between Squaw Island reef black spar buoy and Lansing shoal red nun buoy; there was a heavy sea running at the time. A cast of the lead gave three fathoms least depth. This spot is about two-fifths of a mile north of the usual course of steamers. The charts show there is a depth of fourteen fathoms. Other steamers have reported striking in the same vicinity.

Godfrey F. Burg, one of the best known captains at the head of Lake Superior and a resident of Superior, died on Thursday at the United States Marine hospital, Chicago. Capt. Burg was a sufferer from a complication of diseases and changes of climate failed to effect any improvement, and he determined to be treated at the hospital. Capt. Burg leaves a wife, two brothers, Peter and Herman Burg, and three sisters, Mrs. Nicholas Wether, of Superior, and Mrs. Roland and Mrs. Kuntz, of Duluth.

**SHIPBUILDING ON THE LAKES.**

Captain James Davidson, of Bay City, Mich., says that the class of vessels now being built are too large. In his opinion a steamer of the model of the Queen City is too large for general trading. Many agree with Captain Davidson, the belief being that ships like the steel steamer Castalia, whose gross tonnage is 2,512, are more likely to be profitable. But the vessel-owning firms know what they are doing. They are not spending money for tonnage which will be useless, and the big ships owned by capitalists made money during 1896.

The tendency is to build larger boats. A vessel under 360 feet in length is a pygmy at this time. The increased depth of channels and the opening of the Soo Canal makes larger craft possible. Instead of determining the capacity of a vessel on a mean draft of 14½ feet, as was the case a year ago, the capacity is ascertained by figuring on a draft of 16 feet. It will not be long before a general clamor for improvements in the harbors of the lower lakes will be made. There is no disputing the fact that the cities on Lake Erie are not developing their harbors as fast as lake channels are being dredged.

The ships to be built this winter will be of comparatively immense size. The capacity on a draft of 16 feet of the largest boat for which a contract has been let this season is 5,100 gross tons. The Union Drydock Company, of Buffalo, is going to build a "small-sized" steel steamer. In comparison with the vessels to be constructed she will really be small, although she will cost \$210,000 and will have a gross carrying capacity of 3,000 tons. For general cargo purposes this tonnage compares very favorably to coast and ocean vessels of the most modern construction.

**OFFICERS ELECTED.**

The Bridgeburgh & Black-rock Ferry Company, Buffalo, has been permanently organized, and the following officers have been elected: President, P. T. Miller; vice-president, Richard Humphrey; secretary and treasurer, E. C. Maytham; directors, W. H. Davis, E. Baxter, R. Humphrey, P. P. Miller, and E. C. Maytham.

The International Ferry Company, Buffalo, has elected the following officers: President, E. C. Maytham; vice-president, George Pierce; secretary and treasurer, O. W. Day; directors, Messrs. George Pierce, E. Baxter, W. H. Davis, B. Baxter, P. P. Miller, Curtis, and E. C. Maytham.

**IN WINTER MOORINGS AT CLEVELAND.**

One hundred and twenty vessels, including the U. S. revenue cutter Walter Q. Gresham and the yacht Comanche, are in winter quarters at Cleveland.

The names of steamers are as follows: Argo, Alva, Alcona, Andaste, Sir H. Bessemer, Fayette Brown, Briton, Bulgaria, Henry Cort, Corsica, Cormorant, Columbia, Choctaw, Corona, Cambria, William Chisholm, H. D. Coffinberry, Castalia, Duluth, J. H. Devereux, Desmond, William Edwards, Rhoda Emily, Parks Foster, Grecian, Griffin, W. H. Gilbert, J. C. Gilchrist, M. B. Grover, E. B. Hale, Hiawatha, Joliet, Keystone, J. B. Ketcham, No. 2, Kaliyuga, Marina, Maricopa, Mariposa, Mariska, Masaba, Maruba, State of New York, City of Naples, Norwalk, Nahant, M. C. Neff, Oregon, State of Ohio, Ira H. Owen, J. H. Outhwaite, Preston, Pioneer, Pease, George Presley, Pathfinder, Pontiac, Quito, Queen City, Republic, Roumania, Rube Richards, R. E. Shuck, Specular, Spokane,

Superior, Sir William Stemens, C. Tower, Jr., H. B. Tuttle, Waverly, Wallula, Wawatam, James Wade, J. H. Wade.

Schooners—Alta, Alverson, M. S. Bacon, H. A. Barr, Barlum, Crosthwaite, H. G. Cleveland, Delos De Wolf, Fontana, S. H. Foster, Eliza Gerlach, Golden Age, Grace Holland, Hattie, B. B. Icsman, H. A. Kent, Lone Star, Magnetic, Masten, Maumee Valley, Magna, Northwest, John O'Neil, Planet, May Richards, Rival, Reindeer, Nellie Redington, H. D. Root, Sunshine, Sheldon, Sage, Surprise, Smith & Post, Tasmania, Watson, Yukon.

The barges in winter quarters in Cleveland are—John Ericsson, John S. Russell, Swan, Joseph Whitworth, No. 115, No. 118, No. 126.

Canal barges here are—Alpha and consorts, Beta and consorts.

**LAKE CARGO CARRYING RECORD.**

The Steamer Coralia built by the Globe Iron Works Co., Cleveland, holds the Lake Superior ore carrying record, and the Sir Henry Bessemer the Lake Superior ore record. The Coralia's cargo was 5,080 gross, or 5,699 net tons, from Gladstone to Cleveland on a draft of sixteen feet ten inches. The Bessemer brought down 4,637 gross, or 5,194 net tons, from Ashland to Conneaut on a draft of fifteen feet nine inches. The steamer Queen City holds both the Lake Superior and Lake Michigan grain carrying record. She brought down to Lake Erie 207,000 bushels of corn, equal to 6,210 net tons, from Chicago on a draft of sixteen feet eight inches, and 156,256 bushels of wheat and 58,000 bushels of barley, equal to 5,490 net tons, from Duluth. The schooner George N. Hartnell has the coal carrying record, having taken 4,777 net tons of anthracite coal from Buffalo to Milwaukee. The Union line steamer Oswego is entitled to the speed record of the season. She went from Buffalo to Chicago in fifty-four hours and sixteen minutes, an average speed of 16.4 miles per hour, the distance being 889 miles.

**DEPARTMENTAL INQUIRY.**

Lieut. J. E. Reinberg, inspector of the eleventh life saving district, has completed his investigation of the burning of the City of Kalamazoo, and finds the life saving crew did all in their power to save the vessel and those on board. He gives as his opinion, however, that a watchman should be kept on all boats either in or out of commission, so long as they have people remaining on board. Three lives were lost in this casualty, as duly reported in the columns of the Record.

**A WELL MANAGED LINE.**

The management of the Bessemer Steamship Co. is in receipt of a telegram from representatives of English underwriters, congratulating them on the very small claim for damages sustained by their boats during the past season. The loss is hardly worth mentioning.

**SPEED POWER.**

A prominent English engineer declared at a meeting of one of the marine engineering societies in London recently that an Atlantic liner to steam at the rate of thirty knots an hour would require to be a vessel of about three times the displacement of the Campania, with engines of about 120,000 indicated horse power and with a draft of about fort-five feet.

**LAKE MARINE INSURANCE.**

Mr. C. A. McDonald of the Detroit Fire and Marine Insurance Company, denies that it is likely that marine insurance will be higher next year than during the past season. He says: "The total losses form but a small part of the losses, compared to partial and general average losses, and this year has been light compared to last year; but I feel sure that there will not be any material advance, for I never knew insurance companies to advance rates when they had made money. With our present rates, if we had had such a number of losses as last year, we would have lost just the same. This year has been a fairly good one for insurance companies, and I do not think at present there will be a raise."

**COLLISION CASE SETTLED.**

The collision case of the steamer City of Mackinac with the schooner Crosthwaite, last fall, at the St. Clair flats, has been settled. The damage on the hull was fixed at \$4,500 and was paid this week by the underwriters on the D. & C. Line of steamers, through General Manager David Carter.

SCOTT'S NEW 1896  
COAST PILOT

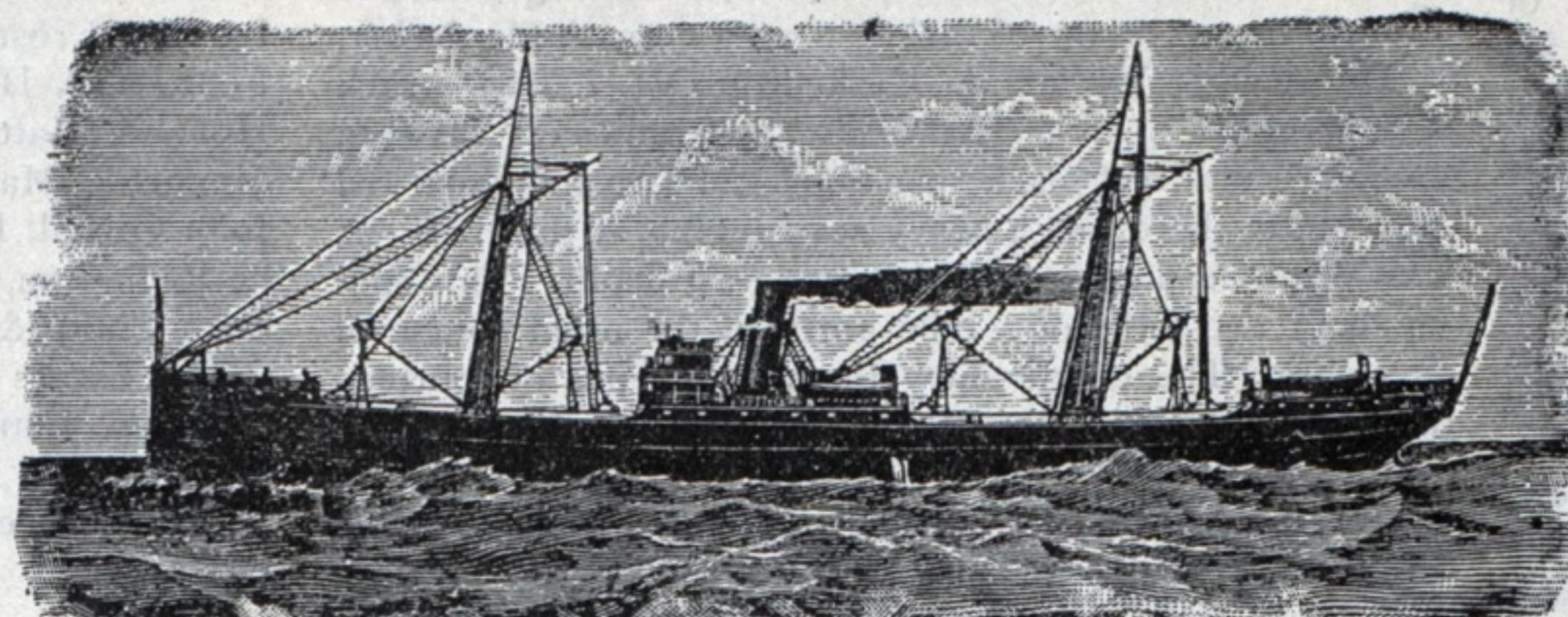
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WOODEN SHIPS,  
FOR LAKE OR OCEAN SERVICE.

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C. W. STIVER, Secretary & Treasurer.

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The best in the market for hatch covers, is stronger, lighter, and more durable than any water-proof goods yet produced. It is made of a twisted thread of pure flax which renders it very strong. It will not crack like cotton goods which is a great advantage.

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THE LARGEST MAKERS OF HIGH GRADE PACKING IN THE WORLD,

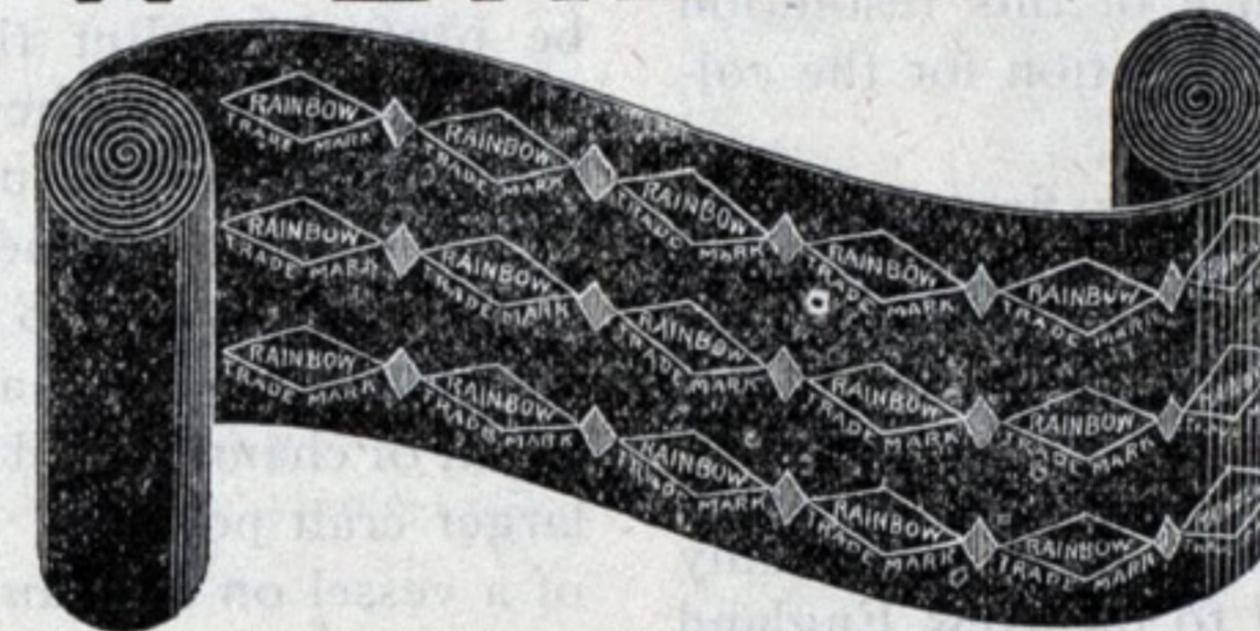
### RAINBOW SHEET PACKING.

Oils, Ammonia or Alkalies do

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No Baking or Following up.



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CHICAGO.  
193-195 Bank St.,  
CLEVELAND, OHIO.

### EASTERN FREIGHT MARKET.

According to the weekly freight report furnished the Record by Messrs. Funch, Edge & Co., steamship agents and brokers, New York, showing the freight report at New York, Philadelphia, Baltimore and other neighboring ports on the eastern seaboard, it is learned that the week just passed has not been an active one in grain charters, in spite of some enquiry for new business, but which was unfortunately predicated on freight rates a trifle lower than owners' views. Rates for berth room maintain the downward tendency referred to in our last, and we think now that it will only be after the turn of the year before a change for the better sets in. Our list of charters shows some charters for timber effected at a slight concession from former figures. The enquiry for oil cargoes to the Far East continues very light, whilst we can report some further enquiry from the Atlantic cotton ports, but unfortunately at figures as yet slightly below owners' views.

The movement in sail tonnage during the past week has been rather slow, as the demand remains light, and rates are still firm on account of continued scarcity of available handy vessels. We have today nothing of particular interest to report, and we may add that we expect no important change in the immediate future, since business is invariably slack during the last fortnight of the old year.

### THE SHEBOYGAN FLEET.

Following is a list of the Sheboygan fleet in winter quarters:

Steamers—J. A. Holmes, Lily E., Sardinia, L. E. Raeser, Jos. Duvall, Levi Grant, City of Grand Haven, C. Amsden, R. P. Mason, Rosa Belle, J. H. Stevens, Cynthia Gordon, Jennie Weaver, Petrel, Conquest, David A. Wells, Abbie. Scows—R. A. Becker, Mary E. Packard. Steamer—M. M. Steam barges—Susie Chapman, R. A. Seymour, Jr. Tugs—Satisfaction, Sheboygan, Trio, Fearless. Fishing tugs in commission—Louise M., Carrie Mathers, Gunderson Bros., Frederick Koehn, Elizabeth G., Hoffnung Bros. Of the Sheboygan fleet wintered at other ports are the schooners Vega and Driver, at Chicago; Eliza Day and Elva, at Milwaukee.

### ADMEASUREMENT OF VESSELS.

Mr. Martin, who superintended the construction of the Flint & Pere Marquette car ferry, Pere Marquette, at the yards of F. W. Wheeler & Co., takes exceptions to the measurement as made by Collector Wilson, who, according to the rules of the government, finds the new boat to have a tonnage of 4,000, making her the largest boat ever built at Bay City. Mr. Martin says there is a special rule governing the measurement of car ferries, which makes the tonnage much less, which is desirous, on account of lower expense when the boat is towed or placed in a drydock. He says that the tonnage of the Ste. Marie is only 900, and she is about the size of the Pere Marquette. Mr. Wilson declined to make a change in the measurement until so ordered by the customs authorities at Port Huron.

### A NEW KEEL LAID.

Shipyard work at the head of Lake Superior, especially at the yards of the American Steel Barge Co., Capt. Alex. McDougall, manager, will be quite brisk this winter. As we announced some time ago, considerable employment will be given to a large body of men by the "whaleback" builders in general, overhauling of the extensive fleet now owned by that company. Furthermore, when the E. B. Bartlett comes out of their large dry-dock, the steamer Matto, owned by the Minnesota Steamship Co., of Cleveland, is to be docked for some repairs. In addition to the foregoing, the ways are being prepared and keel blocks arranged for the building of the new contract recently entered into with the Interlake Company, of Cleveland, for the construction of a new tow barge, which has a builder's number of "140." Metal for her construction is already on the ground, and the preliminary work is now well in hand, so that the vessel will be launched in good season for the opening work during the summer of 1897. The American Steel Barge Company are yet open for new contracts; the yards and staff of skilled builders and designers at the head of the lakes are second to none at any shipbuilding plant in the United States. We understand that Capt. McDougall has his pencil sharpened and is figuring on further new work, which is on the eve of developing.

### VISIBLE SUPPLY OF GRAIN,

As compiled for the "Marine Record" by George F. Stone,  
Secretary, Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT, BU.	CORN, BU.	OATS, BU.	RYE, BU.	BARLEY, BU.
Albany		50,000	100,000		10,000
Baltimore	352,000	1,930,000	1,240,000	137,000	
Boston	1,615,100	613,000	166,000	1,000	82,000
Buffalo	2,878,000	492,000	380,000	157,000	1,791,000
" afloat	419,00	200,000	100,000	95,000	82,000
Chicago	13,599,000	5,100,000	4,180,000	1,049,000	72,000
" afloat		132,000			
Cincinnati		2,000	15,000	5,000	10,000
Detroit	392,000	58,000	29,000	48,000	33,000
Duluth	2,482,000	6,000	273,000	350,000	150,000
" afloat	242,000			53,000	
Indianapolis	198,000	151,000			
Kansas City	475,000	29,000	156,000	11,000	
Milwaukee	348,000	3,000	6,000	218,000	81,000
" afloat					
Minneapolis	19,137,000	21,000	708,000	43,000	60,000
Montreal	447,000	34,000	133,000	35,000	40,000
New York	7,063,000	6,096,000	3,428,000	415,000	2,005,000
" afloat	958,000	363,000	185,000	39,000	317,000
Oswego	40,000	22,000			130,000
Peoria	185,000	234,00	442,000	14,000	36,000
Philadelphia	718,000	1,356,000	130,000		
St. Louis	2,173,000	756,000	225,000	61,000	14,000
Toledo	61,000				
" afloat	1,135,000	167,000	481,000	100,000	
Toronto	232,000		55,000		126,000
On Canal					
On Lakes		75,000			
On Mississippi			197,000	2,000	
Grand Total	55,163,000	18,073,000	12,434,000	2,831,000	5,130,000
Correspond'g date 1895	69,398,000	5,789,000	6,408,000	1,556,000	4,204,000

December 19th, 1896.

### BEHIND WITH FUNDS.

The Lake Carriers' Association has run behind considerably this season and will have \$1,000 or \$2,000 deficiency to make up. State roughly there are about \$2,000 in tonnage dues back yet and a debt of \$5,000 to meet. This shortage has been mainly on account of the unusual number of private lights that have been maintained. There were, for instance, five floating lights on Ballard's reef, below Detroit. These will be assumed by the government, at least in part, next season. As it is undisputed that these lights have saved the insurance companies large sums, the underwriters will be asked to stand part of the deficit.

**NEW PUBLICATIONS—LITERARY NOTES.**

The Joseph Dixon Crucible Company, of Jersey City, N. J., have issued a new catalogue, which describes and illustrates the various goods of their manufacture, embracing graphite in all its forms and applications.

The subject of successful lubrication has been achieved by their pure flake graphite, no matter how high the speed, the friction is reduced to a minimum. Their lubricating graphite is equally useful for wood or metal surfaces, and it is claimed will prevent heated bearings, cool those which may have become heated and reduce friction better than anything in existence. Graphite, not being affected by acids, alkalies or other solvent, and possessing high conductivity, is especially valuable for electrician's use. For wire ropes, cables and iron or steel chains it has no equal, as Dixon's graphite grease prevents oxidization, at the same time thoroughly lubricating the strands or links. The silica-graphite paint has an unequalled record of over twenty-five years, and is an ideal pigment for metal or wood work, roofs, smoke stacks, etc., and is warranted to give satisfaction. This catalogue will be mailed to mine managers and superintendents and others interested, on application. Let us further say that the Dixon Co. seem to have reduced this business to a science, both in application and in selling, and the formula is, briefly, to make the best goods possible for the lowest price possible. Their pencils are without a rival; we would not have written so many pungent paragraphs this year had it not been for the fact that we use the Dixon pencil almost exclusively.

\* \* \* \*

A neat, well-bound book entitled "Wire Rope Transportation in all its Branches" has just been received from the Trenton (N. J.) Iron Co. This book treats fully matters pertaining to wire-rope tramways, hoist-conveyors, mine haulage plants, and power transmissions, and it contains excellent illustrations of the numerous devices made by that company. About 175 pages are given to illustrating and describing the various methods of transmissions, and the typographical work is excellent.

\* \* \* \*

The Canadian Almanac for 1897 contains a great amount of practical and valuable information. This is the fiftieth year of publication of this well-known annual, and its size

has been increased to 354 pages. Among the new features are a short history of Canada, giving the main events in Canadian history, chronologically arranged, an historical diary of the years 1895-96, and an interesting article on the King's Loyalists. The regular departments have been brought up to date and include, a Post Office Gazetteer of the Dominion, an official directory of the clergy, militia and government officials, both Dominion and Provincial, county and municipal officers, etc. The usual mass of interesting statistics and astronomical calculations is given, and the almanac is embellished with engravings of prominent persons and public buildings. Published by The Copp-Clark Co., Toronto.

\* \* \* \*

Among the finest calendars yet received at this office may be mentioned that of the Ashton Valve Co., 271 Franklin street, Boston, Mass., with branch offices at New York, Chicago and London. The card calendar, which is a 14 by 11, shows on the upper half two boys in country garb, also in close deliberation, or conspiracy, in a country lane. The most advanced, or, the fellow that is telling the story to the other, says: "It's a go, sure pop." This quotation seems to emphasize the fact of the Ashton pop safety valves and improved pressure and vacuum gauges. The Ashton Co., of Boston, are universally known as one of the best houses in the United States, and anyone doing business with them can be assured of business-like and courteous treatment at the lowest possible figures compatible with proper work.

\* \* \* \*

The Morris Machine Works, Baldwinsville, N. Y., sends us, with their compliments, one of the handsomest calendars, measuring 22 x 18½ inches, that can be reproduced. We admire the style of the manager of the Morris Machine Works, for he has chosen one of the prettiest and most striking designs of the season. The title, "Music of the Pinewood," shows a perfect work of the Almighty standing gazing in the forest with a sprig of leaves in her port hand, and her starboard hand concealed under the sash of her gown. The border is very tastefully arranged in oak leaves and acorns, and, as we have said, the entire get-up of the calendar is beyond criticism.

**TOBIN BRONZE.**

(TRADE-MARK REGISTERED.)

Tensile Strength, one inch cold drawn rod, upwards of 78,000 lbs. per square inch. Torsional Strength equal to the best Machinery Steel. Non-Corrosive in sea water. Can be forged at cherry red heat. Round, Square and Hexagon Bars for Bolt Forgings, Pump Pistons Rods, Yacht Shafting, Etc. Spring Wire, Rolled Sheets and Plates for Pump Linings and Condenser Tube Sheets, Centerboards, Fin Keels and Rudders.

INCORPORATED 1794

**Insurance Company of North America.**

**CAPITAL, PAID UP IN CASH,**  
**ASSETS.**

CHARLES PLATT, President.  
EUGENE L. ELLISON, 2d Vice President.  
JOHN H. ATWOOD, Assistant Secretary.

LAKE MARINE DEPARTMENT, GEORGE L. McCURDY, MANAGER  
CHICAGO, ILL

\$3,000,000.00  
9,487,673.53

GEORGE H. McFADDEN, Vice President.  
GREVILLE E. FRYER, Sec'y and Treas.

**MARINE AND INLAND INSURANCE.****Atlantic Mutual Insurance Co.,**

Organized 1842. Office 51 Wall Street, NEW YORK.

Insures against Marine and Inland Transportation Risks and Issues Policies making Loss Payable in England.

Assets over \$10,000,000 for the Security or its Policies.

The profits of the Company revert to the assured, and are divided annually upon the premiums terminated during the year; thereby reducing the cost of insurance. For such dividends, certificates are issued bearing interest until ordered to be redeemed, in accordance with the charter.

J. D. JONES, Pres. W. H. H. MOORE, Vice Pres. A. A. RAVEN, 2d Vice Pres. J. H. CHAPMAN, Sec.

**PINTSGH GAS LIGHTED BUOYS.**

Adopted by the English, German, French, Russian, Italian and United States Light-House Departments for channel and harbor lighting; over 500 gas buoys and gas beacons in service.

BURN CONTINUOUSLY from 80 to 365 days and nights without attention, and can be seen a distance of six miles.

BRILLIANT AND STEADY ILLUMINATION.  
ECONOMICAL AND RELIABLE IN OPERATION.

Controlled by the **SAFETY CAR HEATING AND LIGHTING CO.,**  
160 Broadway, NEW YORK CITY.

NEW YORK,  
PHILADELPHIA,  
BOSTON,BALTIMORE,  
SAN FRANCISCO,  
NEW ORLEANS.**Johnson & Higgins**

..Average Adjusters..  
AND  
Fire AND Marine Insurance.

SPECIAL FACILITIES FOR PLACING MARINE LINES.  
GUARANTY BUILDING, BUFFALO, N. Y.

**NO OBSTRUCTIONS ALLOWED.**

Transportation interests at St. Joseph, Mich., are making vigorous opposition to the proposed construction of a bridge over the St. Joseph river by the St. Joe Valley Railroad company. It is claimed that the bridge will impede the navigation of the river, and the secretary of war has ordered government engineers to investigate the matter.

**PROPOSALS.**

U. S. Engineer Office, Duluth, Minn., Dec. 14, 1896. Sealed proposals, in triplicate, for building breakwater at Presque Isle Point, Marquette, Mich., will be received here until noon, Jan. 11, 1897, and then publicly opened. Information furnished on application. Clinton B. Sears, Major, Engrs. 51-1

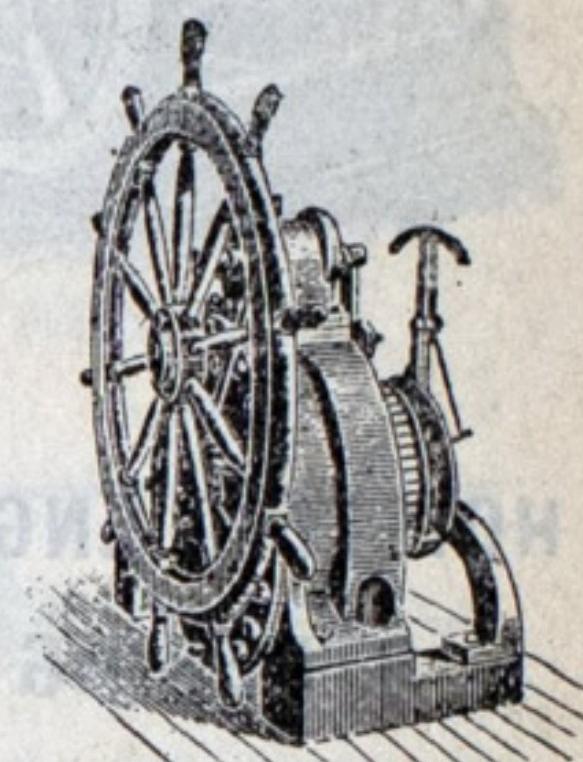
U. S. Engineer Office, Duluth, Minn., Dec. 16, 1896. Sealed proposals for dredging about 21,000,000 cubic yards in the harbor of Duluth, Minn. and Superior, Wis., will be received here until noon Feb. 15, 1897, and then publicly opened. Information furnished on application. Clinton B. Sears, Major, Engrs. 52-6

**QUEEN CITY  
Hydraulic Steerer.**

The best and  
most powerful  
Steerer for Tugs,  
Steamers, Etc.

MANUFACTURED BY  
QUEEN CITY ENGINEERING CO.,  
BUFFALO, N. Y.

Write for Prices and References.



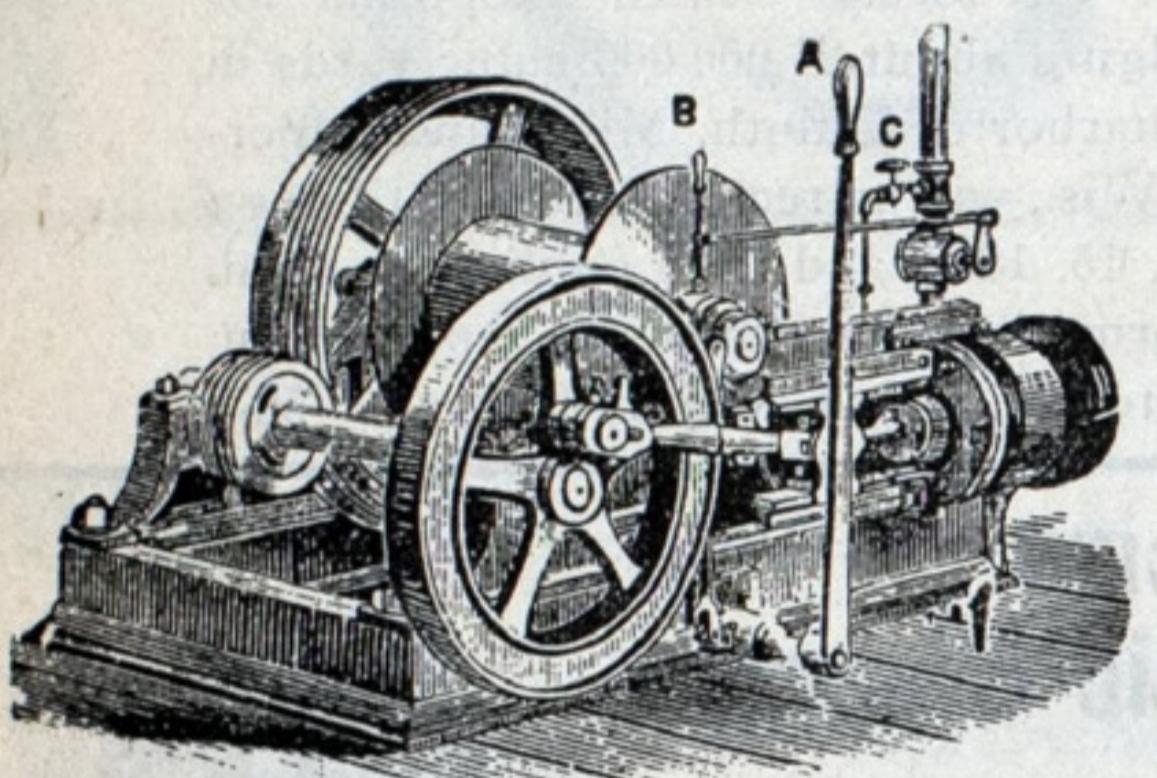
**Ansonia Brass and Copper Co.,**  
SOLE MANUFACTURERS,  
SEND FOR PAMPHLET, 19-21 CLIFF ST., NEW YORK.





## WILLIAMSON BROS.

Cor. Richmond and York Sts.,  
PHILADELPHIA PA.



### HOISTING ENGINES and SHIP STEERING ENGINES.

With either Frictional, Spur or Worm Gear of Various Patterns to Suit all Purposes.

## JEFFERY'S MARINE GLUE

Can be Obtained from the Following Well-known Firms

L. W. Ferdinand & Co., Boston, Mass.  
Howard H. Baker & Co., Buffalo, N. Y.  
Geo. B. Carpenter & Co., Chicago, Ill.  
H. D. Edwards & Co., Detroit, Mich.  
Upson-Walton Co., Cleveland, O.  
M. I. Wilcox Cordage and Supply Co., Toledo, O.

Send for Circulars and Samples.

## THE W. L. SCOTT CO.

WHOLESALE DEALERS IN

SHAMOKIN, WILKESBARRE,  
AND HAZLETON LEHIGH

COALS

---MANSFIELD STEAM COAL

Fueling Steam Vessels a Specialty.

Either from Dock or Steam Scow Mansfield, capacity 300 tons, in buckets, which gives quick dispatch. Boats coaled day or night. Docks lighted with electricity and equipped with Steam Derricks.

Dock and Office at Canal Dock.

ERIE, PA.

## For Sale

The Steamer  
Allie E. Shipman.

Forty gross tons. Dimensions—61 feet keel, 14 ft. 4 in. beam and 5 ft. 6 in. depth of hold, 12 square high-pressure engine. Scotch type boiler, allowed 125 pounds pressure. Boat built at Manitowoc in 1892. She is housed and licensed to carry 45 regular passengers, and has an excursion permit to carry 125 passengers.

Will sell or trade this boat for something larger. Now lying at Escanaba, Mich. For further particulars apply to

J. B. MORAN, MGR.  
Escanaba & Gladstone Transp. Co.  
ESCANABA, MICH.

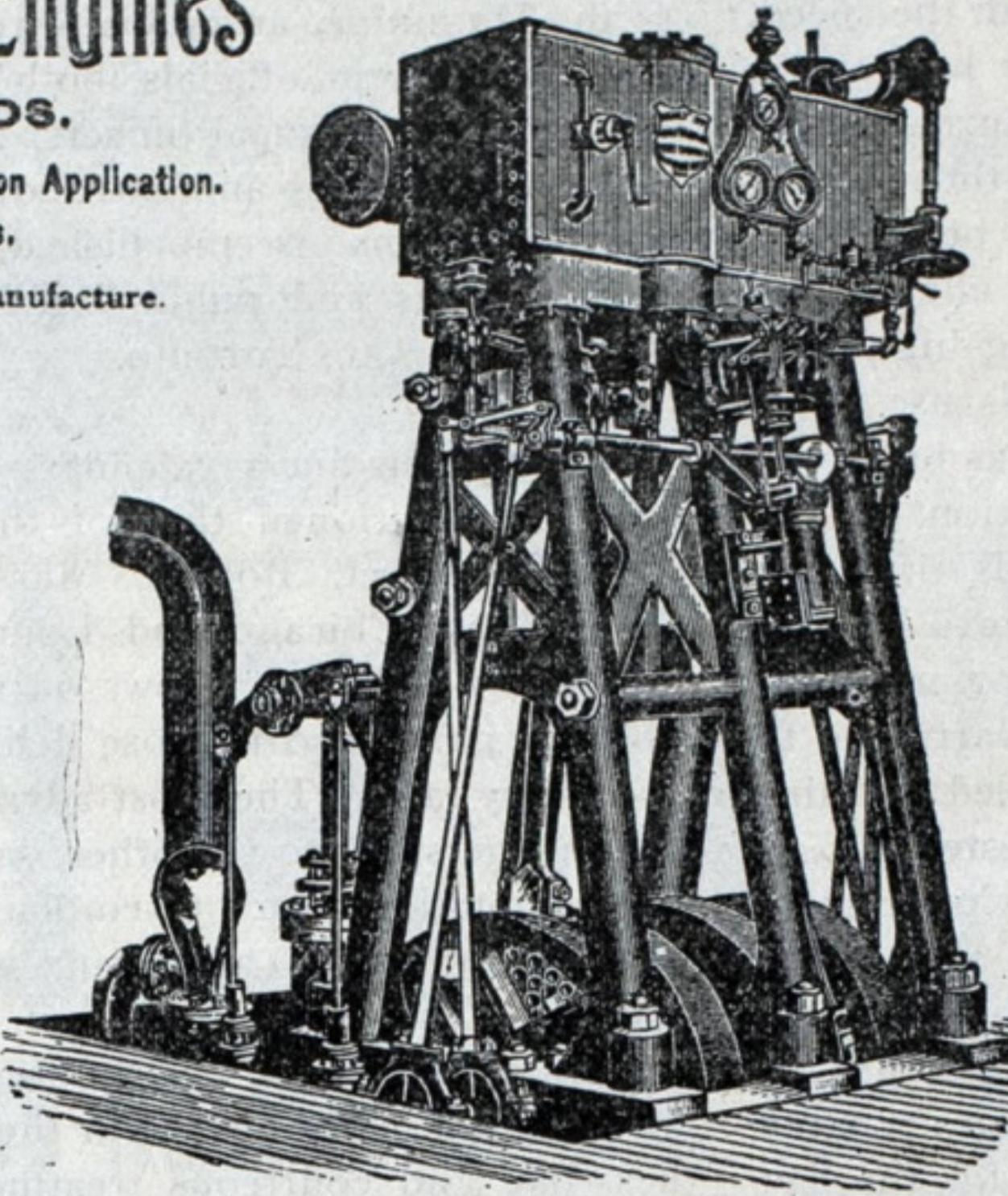
## MONTAGUE IRON WORKS CO., MANUFACTURERS OF Marine and Stationary Engines AND BOILERS OF ALL KINDS.

Heavy Castings a Specialty. Prices Quoted on Application.  
Fore and Aft Compound Marine Engines.

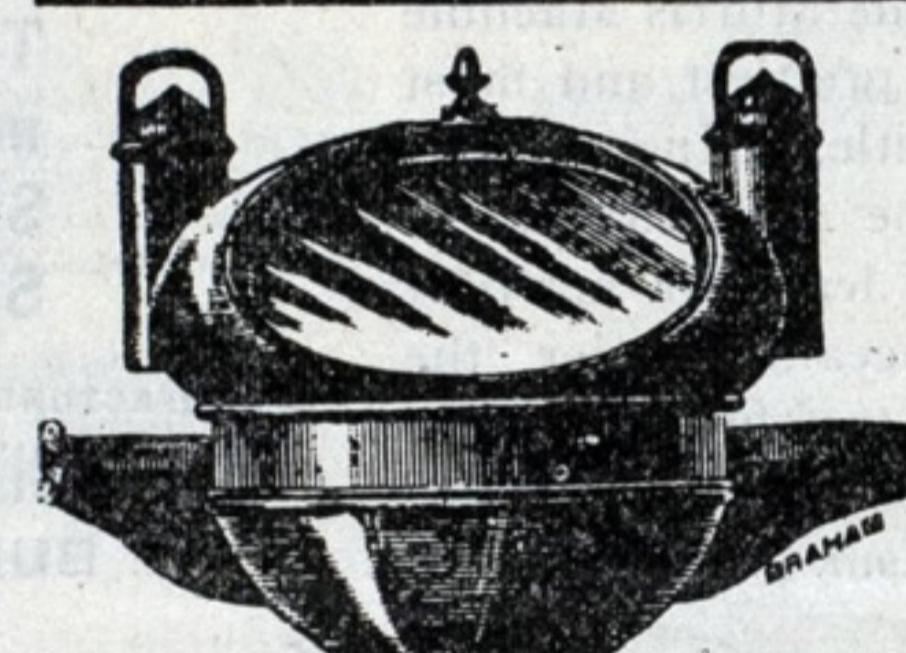
The Engines in the following boats are of our manufacture.

Tug, Hunter, Chicago, 15 and 28x24.  
Tug, Tacoma, Chicago, 16 and 30x24.  
Tug, Zenith, Duluth, 18 and 36x30.  
Steamer Glenn, South Haven, 14 and 28x20.  
Steamer Pine Lake, Charlevoix, 16 and 30x24.  
Passenger Steamer Pilgrim, St. Clair, 14 and 28x20.  
Steam Barge Iona, Grand Haven, 24 and 46x42.  
Steam Barge M. T. Greene, Chicago, 20 and 36x36.  
Steamer H. W. Williams, South Haven, 18 and 36x30.  
Steam Barge Mark B. Covell, Manistee, 18 and 30x26.  
Steam Barge Isabella J. Boyce, Michigan City, 19 and 32x26.  
Steam Barge Luella H. Worthington, Cedar River, 19 and 36x30.  
Passenger Steamer City of Kalamazoo, South Haven, 20 and 40x30.  
Steamer Oval Agitator, Chicago, 14 and 28x20.  
Tug E. G. Crosby, Muskegon, 16 and 30x24.  
Tug Peter Coates, Sault Ste. Marie, 10 and 20x16.  
Steamer Lorain L, South Haven, 12 and 21x16.  
Passenger Steamer Lotus, Escanaba, 16 and 30x24.  
Steam Barge Sachem, Grand Haven, 21 and 38x36.  
Passenger Steamer Bon Ami, Saugatuck, 14 and 28x20.  
Steam Barge Charles A. Street, Chicago, 20 and 36x36.  
Steam Barge Edward Buckley, Manistee, 18 and 36x30.  
Passenger Steamer E. G. Maxwell, Pentwater, 14 and 28x20.  
Passenger and Freight Steamer Bon Voyage, Saugatuck, 16 and 30x26.

The engraving represents our 20 and 36x36 Fore and Aft Compound Marine Engine. We build them all sizes and guarantee them to give satisfaction. Prices furnished on application.



MONTAGUE IRON WORKS CO., Montague, Mich.



FRANK MORRISON, COMPASS ADJUSTER

AND MANUFACTURER OF  
NAUTICAL INSTRUMENTS.  
COMPASSES. BAROMETERS, PATENT LOGS, BINNACLES, STEAM GAUGES, MARINE GLASSES, ENGINE INDICATORS.

All Nautical Instruments Carefully Repaired.

Office with Upson, Walton & Co., 161 River St., Cleveland, O.

## MARINE ENGINES

SINGLE AND COMPOUND.  
5 TO 200 HORSE-POWER. These engines are high-class in workmanship and material and moderate in price. Send for cuts, description and prices.

### Centrifugal Pumps

For raising coal, sand, &c. For dredging, wrecking and circulating. Write for catalogue.

MORRIS MACHINE WORKS,

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HENION & HUBBELL, Agents,

61-69 North Jefferson St., Chicago, Ill.

ABRAM SMITH.

ANGUS H. SMITH.

## ABRAM SMITH & SON, SHIP-BUILDERS,

ALGONAC, MICH.

Wooden Ships of any description built rebuilt, or repaired.

Send for specifications, prices, etc. Good slips for laying up boats.

## The CUDDY-MULLEN COAL CO., Cleveland

DEALERS IN BEST GRADES OF STEAM COAL.

SPECIAL ATTENTION GIVEN TO STEAMBOAT FUELING.

SHIPPING DOCK with Car Dumping Machine, also eight chutes holding 100 tons each, for Rapid Fueling within Eastern Arm of Breakwater, Cleveland.

Steam Lighters Carrying Derricks and Large Buckets in operation day and night within Cleveland Harbor. Pocket dock at Sandwich on Detroit River, formerly owned by Mullen & Gatfield. Pocket dock now under construction on Sault River

Main Offices, Perry-Payne Bldg., Cleveland, O. Telephone No. 8.

RIVER DOCK, West River Street. Telephone 1441.



## Handicapped

SOME BOATS ARE BADLY HANDICAPPED FOR WANT OF THE RIGHT KIND OF

FUEL

We have the right kind at our Amherstburgh Dock, and will take good care of your wants if you will give us a chance.

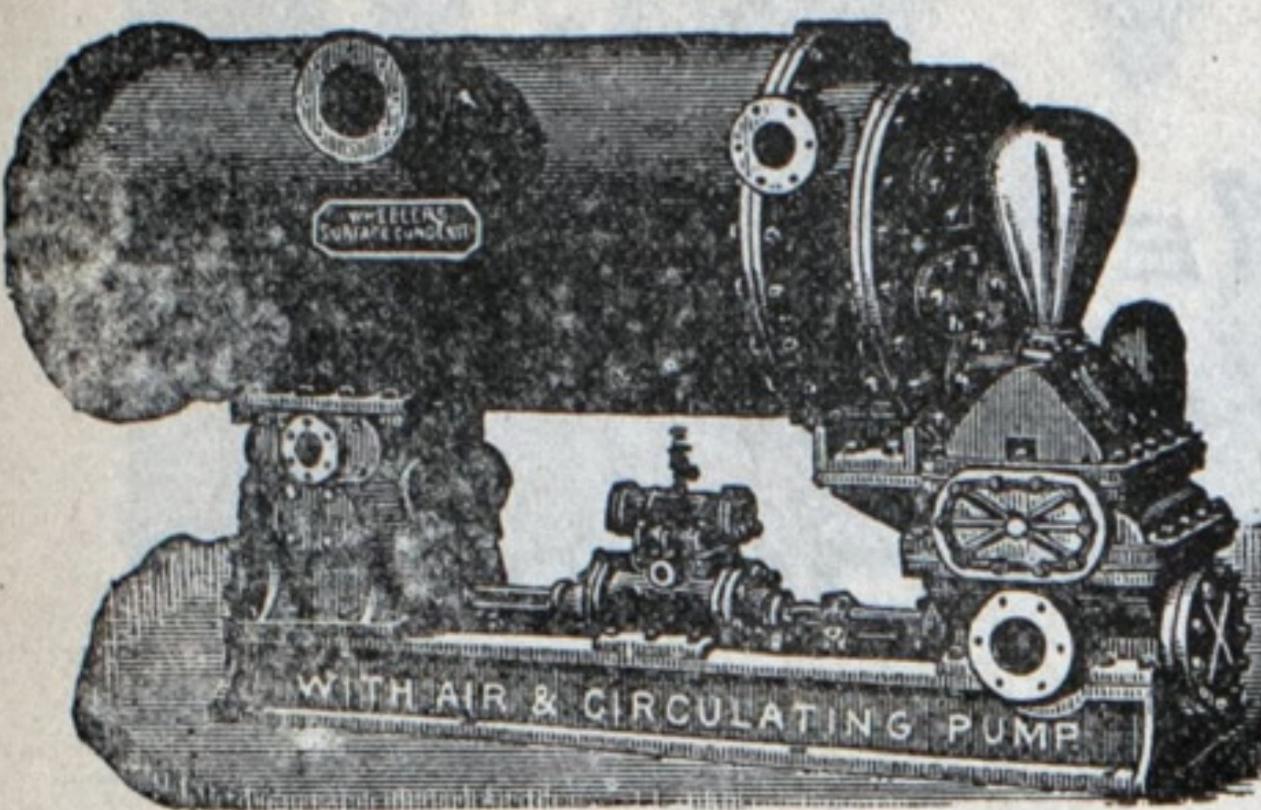
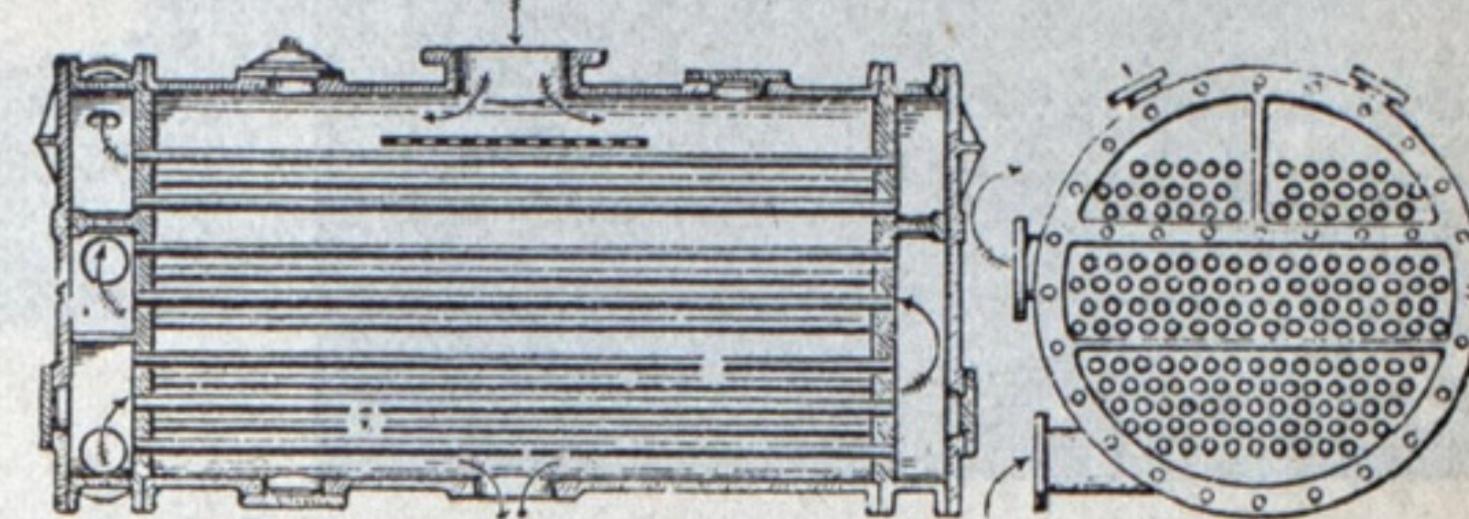
O. W. SHIPMAN,  
Office, 90 Griswold Street, DETROIT, MICH.

# Wheeler Condenser & Engineering Co.,

39 &amp; 41 CORTLANDT STREET, NEW YORK.

## WHEELER'S IMPROVED SURFACE CONDENSERS

Mounted upon Combined Air and Circulating Pumps.

WHEELER SURFACE CONDENSER,  
Mounted on Combined Air and Circulating Pumps.PATENT COMBINED SURFACE CONDENSER AND  
FEED-WATER HEATER.

Sole Proprietors and Manufacturers of the  
WHEELER STANDARD SURFACE CONDENSER.  
WHEELER ADMIRALTY SURFACE CONDENSER.  
WHEELER LIGHT HALL SURFACE CONDENSER.  
VOLZ PATENT COMBINED SURFACE CONDENSER AND  
FEED-WATER HEATER.  
WHEELER FEED-WATER HEATER, AIR AND CIRCULATING  
PUMPS.  
EDMISTON PATENT FEED WATER FILTER.

Send for Pamphlet, "Machinery for Small Boats, etc."

## P. M. CHURCH & CO.

SAULT STE. MARIE, MICH.

*Ship Chandlery,  
Hardware,  
Paints, Oils,*



And all classes of  
**VESSEL SUPPLIES.**

Coppersmith Shop in connection.

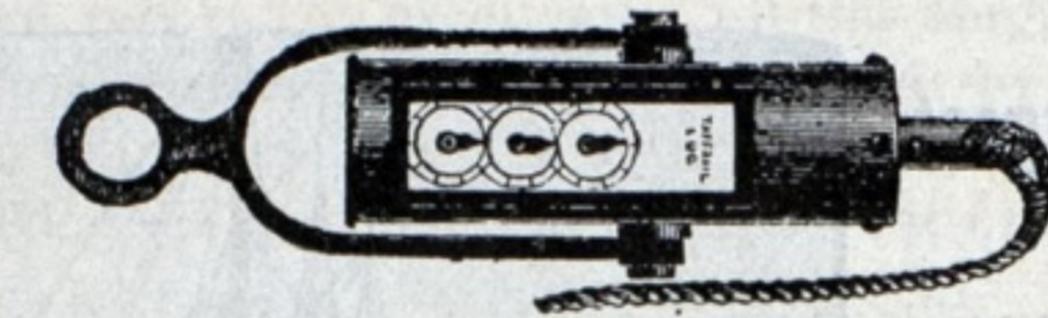
Corner Portage and Ashmun Sfs.

TELEPHONES: - { OFFICE NO. 7.  
RESIDENCE NO. 4.

## PROPOSALS.

OFFICE OF THE LIGHT-HOUSE BOARD,  
Washington, D. C., December 1, 1896.  
Sealed proposals will be received at this  
office until Wednesday, the 30th day of  
December, 1896, for furnishing the  
materials and labor of all kinds necessary  
for the construction, equipment and de-  
livery of three first-class composite light-  
vessels and two steam tenders. Bids  
will be received for each vessel or class  
of vessel separately, or for all five of the  
vessels, all to be delivered on the  
Atlantic coast. An alternate bid will be  
received for one of the three light-ves-  
sels, to be delivered at San Francisco,  
Cal. The said vessel or vessels must be  
completed and delivered within ten cal-  
endar months from date of the approval  
of the contract by the Secretary of the  
Treasury, and bidders are informed that  
because of the urgent need of the speedy  
delivery, the element of time to be con-  
sumed in construction will be given due  
consideration in determining the award  
of the contract, and in each case the con-  
tract will be awarded to the lowest best  
responsible bidder. Each proposal must  
be accompanied with a certified check  
payable to the order of the Secretary of  
the Treasury, in the sum of five thousand  
dollars (\$5,000). The certified check of  
the successful bidder will be retained  
until the execution of a formal bond or  
contract, and the approval of the same  
by the Secretary of the Treasury, and  
the certified checks of the unsuccessful  
bidders will be returned immediately  
after the proposals of the successful bidder  
have been accepted. Forms of pro-  
posals, plans and specifications showing  
what is required, can be had or seen by  
applying to this office. The right is re-  
served to reject any or all bids and to  
waive any defects. JOHN G. WALKER,  
Rear Admiral, U. S. N., Chairman.

## ...The Bliss Taffrail Log

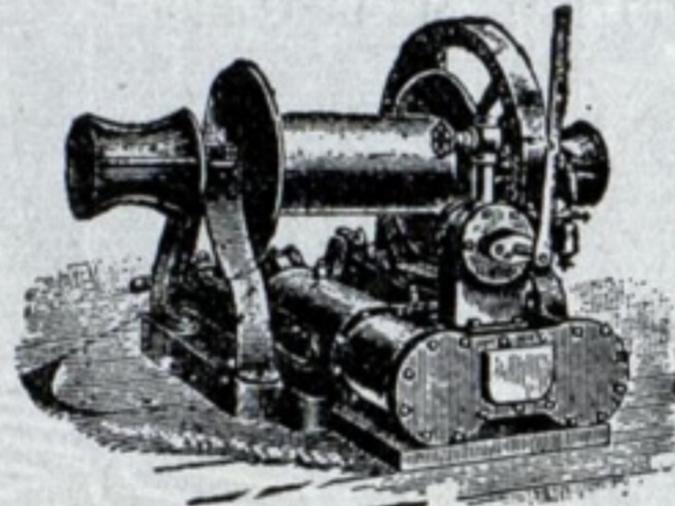


Over 11,000 sold.  
A portion are now made to indicate  
**Statute Miles**  
For use on the lakes.

Send us your old Bliss Register and we will alter it  
to indicate statute miles for \$3.50.  
There are poorly made imitations of our rotator.  
Buy only the **Bliss Adjustable Rotator**, stamped  
our name and patents. For sale by Ship Chandlers.

JOHN BLISS & CO.  
128 Front Street, NEW YORK

## Dock and Deck Hoists.



ALL KINDS OF

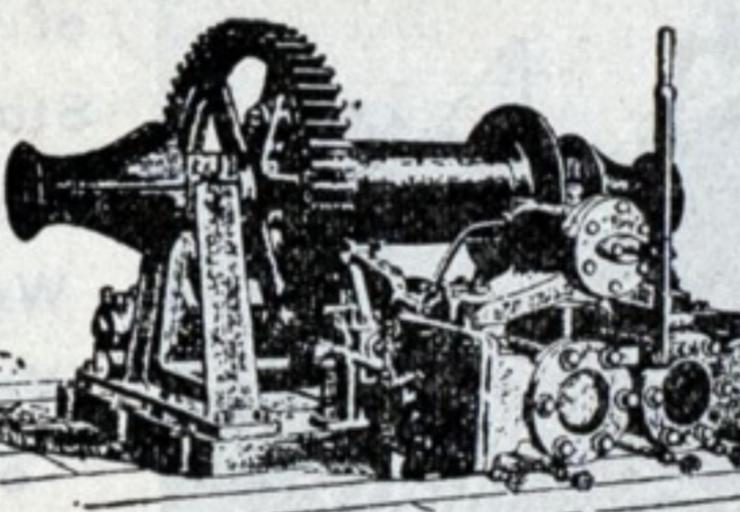
### Machinery and Friction Hoists.

JACKSON &amp; CHURCH, Saginaw, Mich.

Send for Prices  
and Circulars.

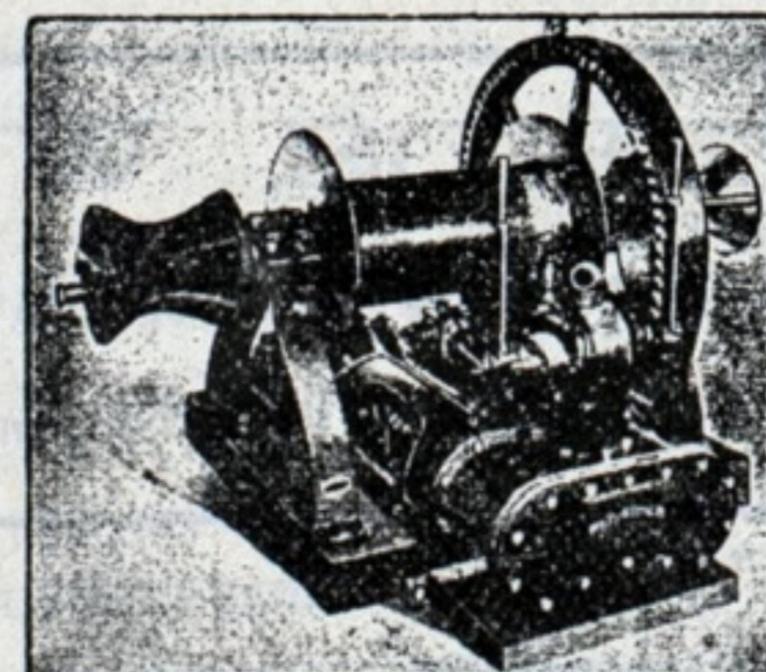
## HOISTING ...ENGINES

We build them in all sizes  
from new and improved  
designs. Every engine  
thoroughly tested before  
leaving our shop, and  
guaranteed to be satisfac-  
tory in every case. When  
in want of a Hoist for  
mining or any other pur-  
pose, kindly permit us to name you prices. We know  
we can please you.



MARINE IRON CO., - - -

BAY CITY, MICH



## DECK HOISTS

- Coal and Contractors' Hoists,
- Steam Steering Gears and
- Conveying Machinery
- For all Purposes.

MANUFACTURED BY W. H. WHITTEMORE,  
WRITE FOR PRICES.

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## J. J. KEENEN, RIVERSIDE STEAM BOILER WORKS.

Marine, Locomotive and Stationary Boilers.  
Marine Work a Specialty.

STEEL IRON WORK OF ALL KINDS.  
REPAIRING PROMPTLY ATTENDED TO.

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## ESCANABA TOWING & WRECKING CO., Escanaba, Mich.

Tugs; Lighters, Steam Pumps, Hawser, Hydraulic Jacks and Diving Appliances always ready

TUG MONARCH—Engine Compound, Cylinder 16 &amp; 30 in. diameter, 30 in. Stroke, Steam Pressure allowed, 125 lbs.

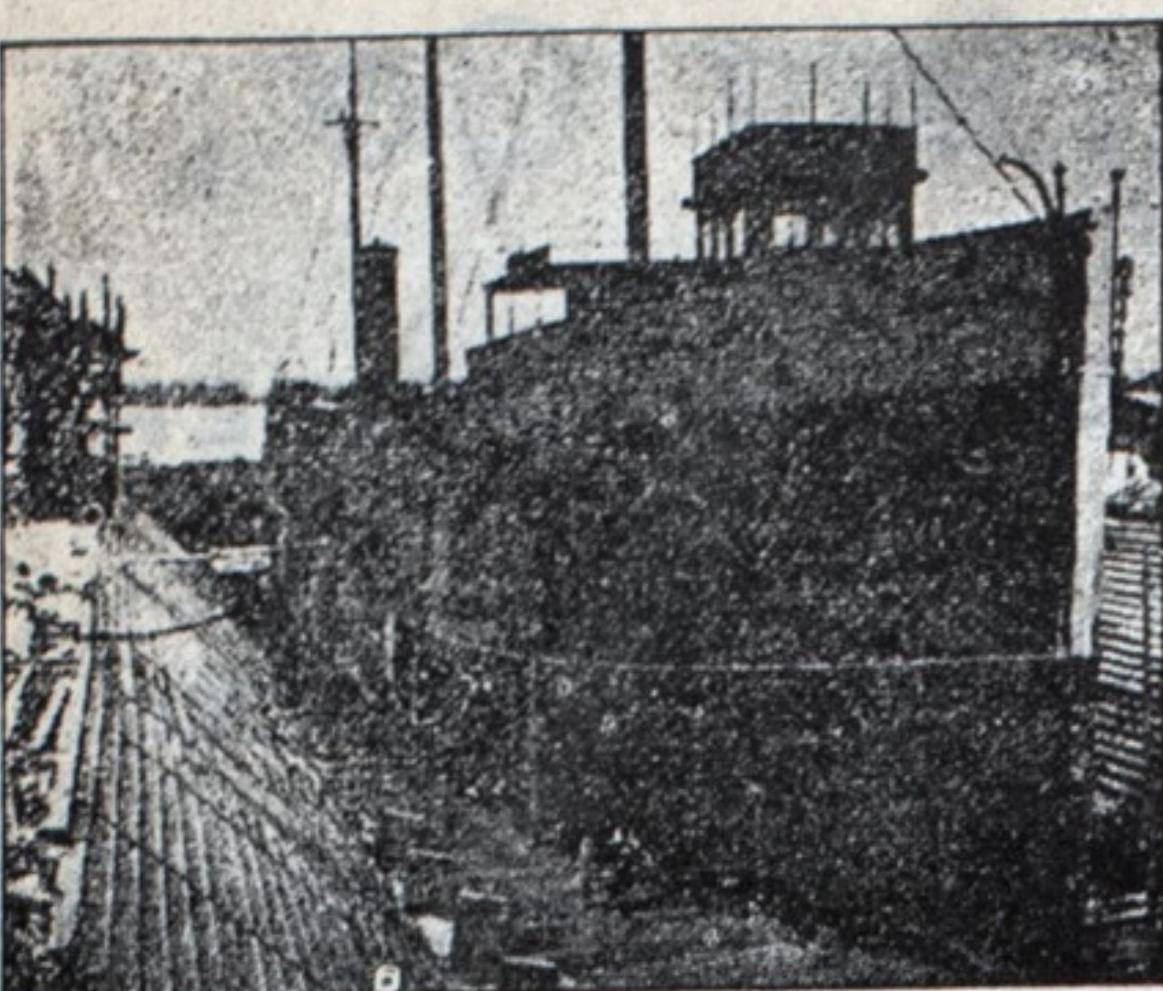
TUG DELTA—Cylinder 20 by 22. Steam Pressure allowed, 105 lbs.

TUG OWEN—Cylinder 20 by 20. Steam Pressure allowed, 104 lbs.

SEVEN AND FOURTEEN INCH SUC. OII

CHICAGO.

CENTRIFUGAL PUMPS.



# CRAIG SHIP BUILDING Co.,

TOLEDO, OHIO

New Dry-Dock 450 feet long, 110 feet wide on top, 55 feet wide on bottom, 16 feet water on sill.

METAL  
AND WOODEN  
SHIP BUILDERS.

*Repairs to Metal and Wooden Ships  
A Specialty.*

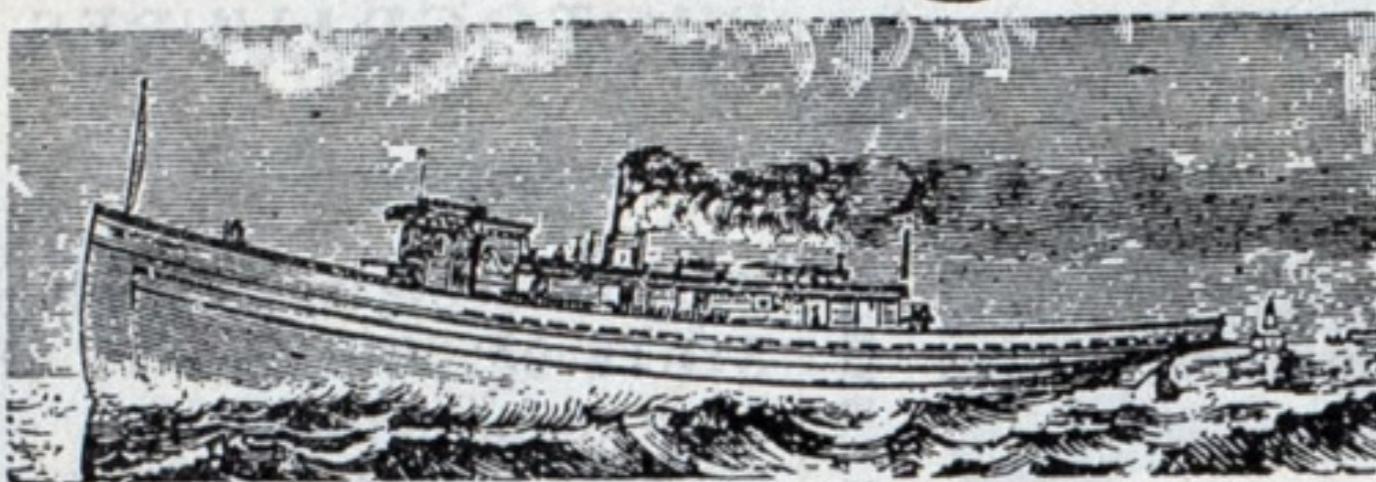
H. A. HAWGOOD, Pres't.  
PHILIP MINCH, Vice-Pres't.

C. A. MORGAN, Gen'l Mang'r.

J. A. SMITH, Sec'y.  
J. R. SPRANKLE, Treas.

## The Cleveland Tug Company,

First-class Tugs,  
Steam Pumps,  
Divers, Hawser,  
Lifting Screws,  
Etc., furnished  
Promptly on  
Orders by Tele-  
graph or other-  
wise.



Steamers when  
outside wanting  
our Tugs, blow  
one long whistle and as many  
short ones as  
they want tugs.

OPEN DAY and NIGHT.  
Long Distance Telephone 725.

OFFICE 23 RIVER ST.  
Cleveland, Ohio.

**The "CINCINNATI" Automatic  
STEAM STEERING GEAR**

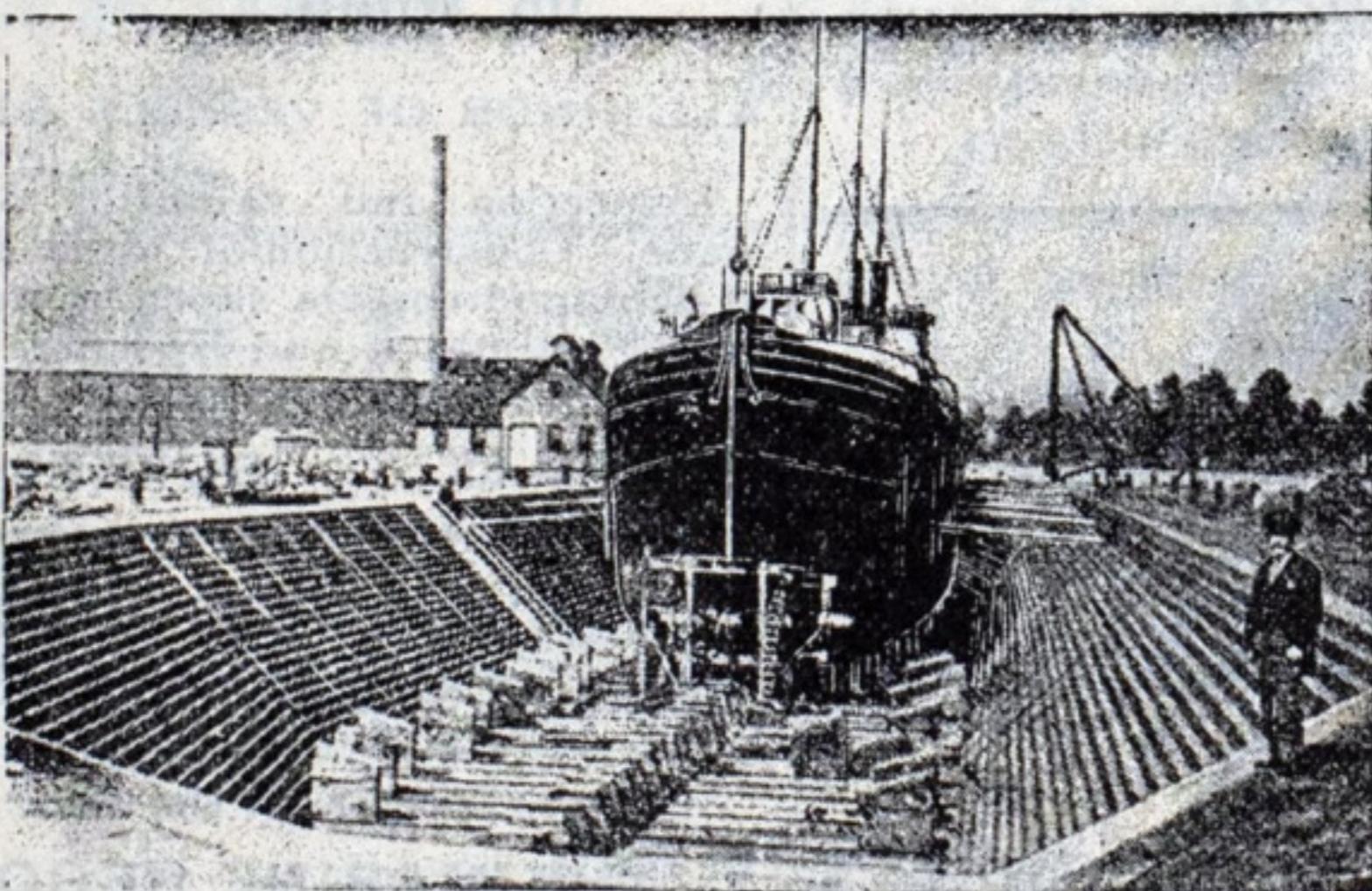
Simple, Powerful Machine. Noiseless and Sure. Send for Circular.  
FRONTIER IRON WORKS, Detroit, Mich., AGENTS FOR THE LAKES.

## AMERICAN STEEL BARGE CO. STEEL AND METAL SHIPS

OF ALL CLASSES BUILT ON SHORTEST POSSIBLE NOTICE AT OUR YARDS AT  
WEST SUPERIOR, WIS., and also at EVERETT, WASH.

PHOTOGRAPH OF 300 FT. BOAT IN DOCK.

Plates and  
Material  
Always on  
Hand to  
Repair all  
kinds of  
Metal  
Ships in  
Shortest  
Time.



Best  
Quality  
of Oak in  
Stock for  
Repairing  
Wooden  
Vessels  
of all  
Classes.

Length, Extreme..... 537 feet.  
Breadth, Top..... 90 " 4 in.  
Breadth, Bottom..... 52 " 18 "

Entrance, Top..... 55 feet 9 in.  
Entrance, Bottom..... 50 "  
Depth over Sills..... 18 "

### LARGEST DRY DOCK ON THE LAKES.

PRICES FOR REPAIRS AND DOCKING  
SAME AS AT LOWER LAKE PORTS.

SUPERIOR, WIS.

A NUMBER OF PROPELLER WHEELS IN STOCK AT DRY DOCK.

## A. GILMORE'S SONS,

DRY DOCKING  
SHIP BUILDING  
AND REPAIRING.

EAST SIDE, NEAR IRONVILLE.

TOLEDO, O.

Dimensions of Dock, 236 feet long, 55 feet wide at top and 37 feet wide at gate.  
Nine feet water over sill.

RATES OF DOCKING, Ten Cents per Registered Gross Ton for Vessel over 200 Tons.  
Jig Mill and Planer in connection with Dock.

PHONE NO. 157.

Paint your  
Vessels with **Superior Graphite Paint**

NO BLISTERING, CRACKING OR SCALING.

Made especially for Stacks, Decks, Sides, Hulls and Water Compartments.

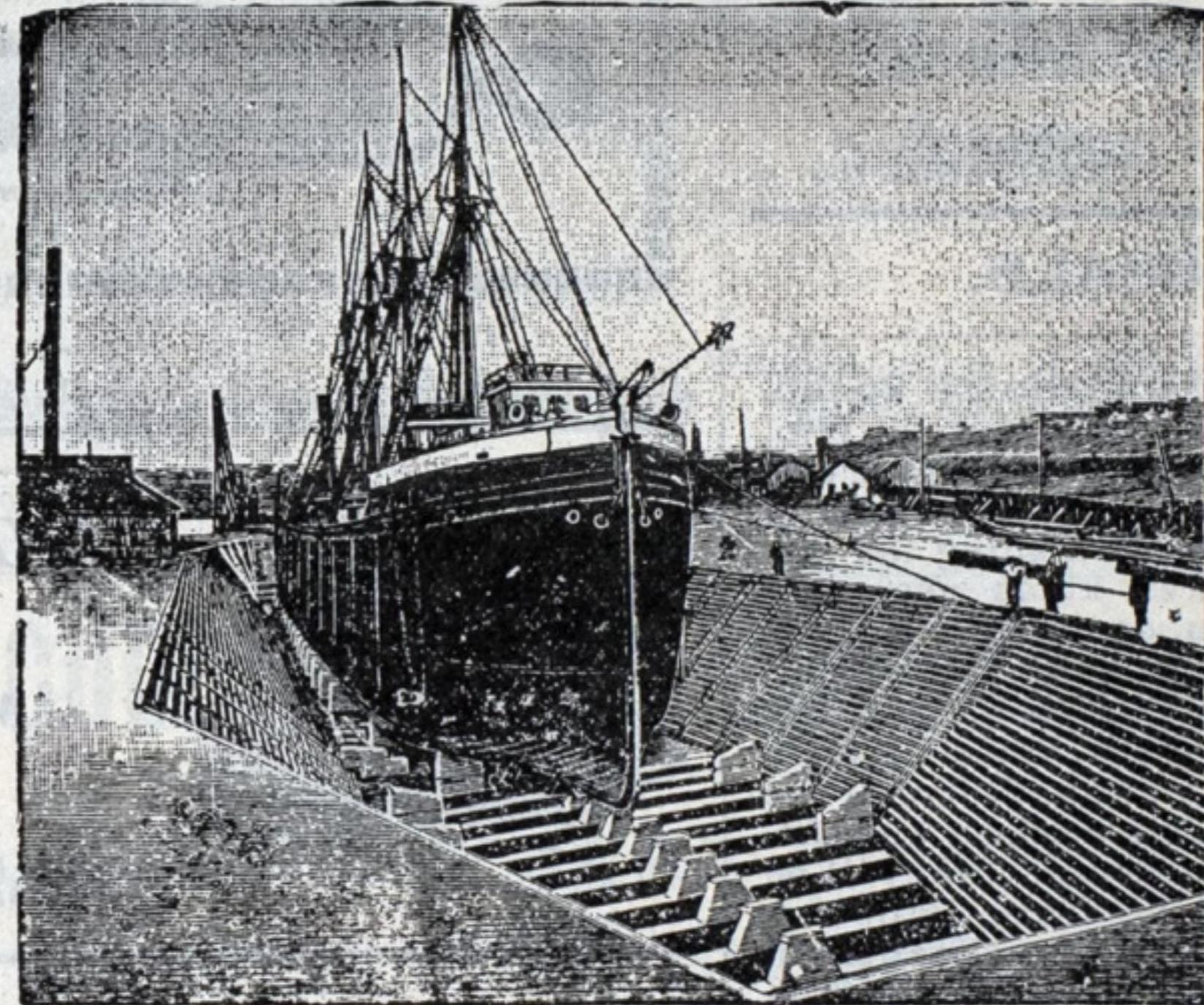
Strictly anti-rust, and most durable and economical.

DETROIT GRAPHITE MFG. CO. 542 River St., Detroit, Mich.

WHITTON & BATES, Agents, 503 Perry-Payne Building, Cleveland, O.

## THE SHIP OWNERS DRY DOCK CO.

Largest  
DOCK  
YARD  
on the  
GREAT  
LAKES.



Capacity  
with  
Two Docks  
to Dock  
the  
Largest  
Ships on  
the Lakes.

GENERAL REPAIR WORK PROMPTLY ATTENDED TO.

Being equipped with Lucigen Lights we do work at night as well as day.

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Foot of Weddell Street, CLEVELAND, O.

C. A. MACDONALD & CO.,

GENERAL MARINE INSURANCE AGENTS.

RIALTO BUILDING.

CHICAGO, ILL.

THOS. WILSON,

MANAGING OWNER WILSON'S TRANSIT LINE,

General Forwarder, Freight and Vessel Agent.

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VESSEL AND INSURANCE AGENTS,

Office Telephone, 767.  
Residence John Mitchell, Phone 3506.

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C. R. JONES & CO.,

VESSEL AGENTS.

FIRE AND MARINE INSURANCE.

Nos. 501, 502 and 503 Perry-Payne Bldg., CLEVELAND, O.